

Acquisition
Software Development
Capability Evaluation
Volume 2



Department of the Air Force
Headquarters Air Force Materiel Command



Acquisition

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

This pamphlet provides guidance for planning and conducting a Software Development Capability Evaluation (SDCE). The SDCE is a structured methodology for assessing an organization's ability to develop software for mission critical computer resources. The primary purpose of the SDCE is to reduce acquisition risk for software-intensive systems. The SDCE is conducted as an integral part of the source selection process and addresses each offeror's ability to develop the software required by a specific request for proposal (RFP). The evaluation covers the total software development process, including systems and software engineering, management, quality, product control, organizational support, tools, facilities, and personnel experience and qualifications. Risk reduction is achieved by increasing the probability of selecting a fully capable offeror with the capacity to develop software consistent with the RFP requirements and program baselines, by early and comprehensive visibility into the offeror's proposed capabilities, and by ensuring contractual commitment by the offeror to use the processes proposed. The SDCE is intended to be applied to both prime contractors and their associates and to subcontractors responsible for software development. This publication does not apply to the U.S. National Guard or U.S. Air Force Reserve units and members.

This pamphlet is published in two volumes. Volume 1 provides a detailed description of the SDCE methodology, including a comprehensive step-by-step expansion of how to perform the SDCE, and a detailed description of the model, including criteria and questions. Volume 2 contains an assortment of support material such as examples, templates, forms, checklists, and briefing charts that facilitate the use of the SDCE method.

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ATTACHMENT 2. TEMPLATES AND EXAMPLES

This attachment contains examples of various documents that are used during the SDCE process. They are intended to help explain the various tasks within the SDCE process and to provide a point-of-departure for the SDCE in preparing documents needed for the application of the SDCE to a specific source selection.

The following list defines the templates included in this attachment and shows the primary section in the body of this pamphlet that describes the use of each template.

<u>Volume</u>	<u>Section</u>	<u>Attachment</u>	<u>Template Description</u>
1	4.C	2-1	SDCE Implementation Plan
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1	4.G&E	2-4	Site Visit Agenda
1	4.E	2-5	RFP General Notice to Offerors
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1	4.L	2-14	Sample Presentation to Unsuccessful Bidder

Attachment 2-1. SDCE Implementation Plan

The source selection plan is the master document for the source selection; it contains material describing and controlling the initiation and conduct of the source selection. Each required paragraph is listed below with annotation showing how the SDCE material fits in. An alternative scheme often employed is to cover the same material in a companion document or appendix rather than integrating the SDCE material into the plan's main body. A sample separate SDCE implementation plan begins on the next page.

Source Selection Plan Outline

INTRODUCTION

No new information needed for SDCE.

SOURCE SELECTION ORGANIZATION

Describe the size, organizations represented, and key names or positions of the SDCE team. Describe the relationship of the SDCE team to the SSEB. Specifically identify any individuals on the SDCE Team who are not part of the SSEB.

PROPOSED PRESOLICITATION ACTIVITIES.

Generally not applicable to SDCE.

EVALUATION PROCEDURES

Describe the process for conducting the SDCE, reviewing the proposals, and evaluating the results. Appropriate portions of this pamphlet may be quoted for this section or references made to overview or process material contained herein. It is important to identify any standard process described in this pamphlet that is being altered in any way.

EVALUATION CRITERIA

Ensure that the relevant SDCE portions of this section are adequately described. Describe the relationship of the SDCE to the overall source selection structure of Areas, Factors, and Subfactors. Work with the rest of the SSEB to ensure that this section contains a well-integrated "whole story" for the source selection.

ACQUISITION STRATEGY

Generally not applicable to SDCE. A possible exception is if the local procuring office determines that the use of the SDCE is, of itself, a key aspect of an acquisition strategy that must be identified in this section.

SCHEDULE OF EVENTS

Ensure that the SDCE events are all described and positioned correctly on the schedule. Ensure that the SDCE activities are properly integrated with the other source selection activities.

HYPOTHETICAL

ADVANCED COMBAT FIGHTER

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

IMPLEMENTATION PLAN

**APPENDIX __ TO THE
ADVANCED COMBAT FIGHTER SOURCE SELECTION PLAN**

ASC/YAES

5 APRIL 1995

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5 April 1995

COORDINATION:

ASC/YAC _____	Date	(Configuration and Data Mgmt)
ASC/YAE _____	Date	(Engineering)
ASC/YAF _____	Date	(Financial Management)
ASC/YAK _____	Date	(Procurement)
ASC/YAL _____	Date	(Logistics)
ASC/YAA _____	Date	(Projects Management)

APPROVED

ASC/YA _____	Date	(System Program Director)
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HYPOTHETICAL

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[Not included in this example plan]

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1. INTRODUCTION

A Software Development Capability Evaluation (SDCE) will be conducted as an integral part of the EMD Source Selection of the Advanced Combat Fighter (ACF) program. An SDCE is required for the acquisition of major systems that are software intensive. The focal point for the SDCE will be the Directorate of Engineering, ACF Weapon Systems Program Office. The SDCE will address six general areas: Program Management, Systems Engineering, Software Engineering, Quality Management and Product Control, Organizational Resources and Program Support, and Program Specific Technologies.

1.1 Purpose. The SDCE is intended to review and assess the offerors' specific capabilities and capacities to develop software as required in the RFP. This review process shall be an integral part of the EMD source selection process. The SDCE provides a vehicle by which the acquisition team gains an understanding of the offerors' existing and proposed software development methods and tools, and ensures that the disciplined development processes are incorporated into the contract.

1.2 Scope. The SDCE is intended to be performed on all AFMC development programs that require software development as an integral part of the system development. The scope of this review shall be limited to those contractors proposing to develop software for the ACF Weapon System. Major subsystem contractors developing significant mission critical software will be included in the SDCE.

1.3 Authority. DoDD 5000.1 direct that an SDCE be conducted on all software intensive development and major modifications. AFMCPAM 63-103 provides guidance on how to conduct an SDCE.

2. APPLICABLE DOCUMENTS

DoDD 5000.1	Defense Acquisition
DoDD 5000.2	Defense Acquisition Management Policies and Procedures
AFFARS, Appendix AA	Air Force Federal Acquisition Regulation - Source Selection
AAFMCPAM 63-103	Acquisition Management, Software Development Capability Evaluation

3. TEAM COMPOSITION

The SDCE team will include core members and supporting members. The core members will participate in all site visits and will be responsible for the analysis and evaluation.

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Core Members

Mr. S. W. Whitehat	ASC/EN(CR)	SDCE Advisor
Ms. A. B. Seeze	ASC/YAES	Team Chief, Computer Resources Systems Engineer
Major A. R. O'Gent	ASC/YAEA	Avionics Lead Engineer
Mr. B. A. Goodguy	ASC/ENAS	Software Lead Engineer

Supporting Team Members

Mr. I. M. Kuhl	ASC/YAL	Acquisition Logistics
Capt D. D. Sharp	ASC/YAC	Configuration and Data Manager
Mr. B. Y. Wright	ASC/YAK	PCO
Mr. C. U. Now	ASC/ENAM	Radar Engineer
Capt J. R. Beankowski	ASC/YAF	Financial Manager
Mr. C. M. De'Prose		CMD Contract Management Division Representation

4. ASSIGNED RESPONSIBILITIES

4.1 ACF SPO Responsibilities. ASC/YAES will be responsible for carrying through with the contents of this plan. Specifically, YAES will accomplish the following:

- Manage and control the SDCE.
- Establish team member requirements and coordinate through the appropriate channels to obtain those resources.
- Establish and coordinate schedules and itinerary.
- Initiate contracts letters to notify the offerors of the review.
- Conduct a pre-SDCE team meeting.
- Assure timely availability of the proposals to the SDCE team members.
- Prepare team member instructions and guidance.
- Accomplish administrative requirements, including travel arrangements and orders.
- Prepare SDCE reports and briefings as required.

4.2 ASC/EN(CR) SDCE Advisor Responsibilities. The ASC/EN(CR) advisor will support the site visit reviews and provide guidance on planning and implementation of the SDCE. In addition, he will support the source selection as an SDCE SSEB advisor.

4.3 SDCE Team Chief Responsibilities. The Team Chief will direct the team activities and acts as spokesman and administrator for the team.

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4.3.1 Prior to the SDCE site visits to the contractor's facility, the Team Chief will:

Assure each team member is qualified and trained in the SDCE method.

Prepare formal plans of action for the team.

Request, through proper channels, any information required from the contractor prior to the team's arrival at the contractor's facility.

Conduct a meeting of the team members to inform them of the requirements for the review, to review the plan, and to ensure that team members fully understand their assigned tasks.

Discuss SDCE support arrangements and agenda with the offeror and ensure contractor personnel will be available to comply with agenda topics.

4.3.2 During the SDCE site visits, the Team Chief will:

Hold a team meeting with CMD personnel prior to meeting with the contractor to discuss pertinent information including past performance, workload, contractor relations, and general information of interest to the team.

Chair and control the SDCE, keeping the discussion in scope and on schedule.

Lead the effort to incorporate SDCE findings into the source selection evaluations.

Review written reports, reconcile conflicts, prepare the final report and briefings; and present findings as required.

4.3.3 Following the SDCEs, the Team Chief will:

Assure SDCE metrics are prepared and provided to the SDCE Advisor.

Support the preparation of feedback information (briefings) to the winner(s) and loser(s).

4.4 Team Member Responsibilities. Team members are responsible for supporting the Team Chief. Specifically, they shall:

Review the offerors' proposals, including the SDCE packages prior to the site visit
Participate in the site visits.

Participation in team meetings and SDCE presentations as required.

Prepare analyses and write CR's and DR's as appropriate.

Conduct the review and document findings and evaluations in accordance with the contents of this plan and the Team Chief's direction.

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HYPOTHETICAL

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5. SCHEDULE AND SEQUENCE OF EVENTS

The attached SDCE planning source selection schedule addresses both key source selection events and SDCE specific activities.

6. ORGANIZATION AND STRUCTURE WITHIN THE SOURCE SELECTION

The SDCE shall be a separate factor under the technical area. In addition, SDCE findings will be integrated and coordinated across all areas (integrated product development) impacted and covered by the SDCE method. All core members of the SDCE Team shall be evaluators and advisors on the SSEB. The CMD representative shall be an advisor to the SDCE Team.

7. SPECIAL AREAS OF EMPHASIS

7.1 Feedback. Team members must ensure that they do not provide any judgmental feedback to the offerors. An official feedback briefing will be provided by the Team Chief consistent with AFFARS, Appendix AA and the AFMCPAM 63-103 describing the SDCE method.

7.2 Source Selection Sensitive Information. All information gathered at each site must be treated as source selection sensitive, and no information gathered from one offeror may be divulged to another offeror or personnel not on the source selection team. All information will be marked, managed, and dispositioned in strict accordance with source selection guidelines.

7.3 Consistency. Team members should look for consistency within and between the information sources, including the SDCE proposal information, the other proposal volumes, the site visit data collected, and the proposed SDP, SEMP, and SEMS.

8. SDCE EVALUATION AND REPORTING

8.1 Evaluation. Following each site visit, the SDCE team will perform an analysis of the offeror's software development capability per the model criteria. Site visit review dates and travel plans will allow for two days following each review to consolidate team member assessments into a final analysis. The final evaluation will be based on the following sources of information:

Offeror's documented standards, procedures, and tools as called for in the Proposal Preparation Instructions (PPI) and submitted in the proposal.

Offeror's actual program examples of applying his standards, procedures, and tools as called for in the PPI and submitted in the proposal.

Offeror's response to questions submitted with the proposal, together with information provided during the site visit.

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Using these sources of information, the SDCE team members will jointly analyze and evaluate the offeror's capability per the predefined model criteria and SDCE standards for evaluation. The results of this analysis will form the basis for the final evaluation. The final evaluation will then be formalized as ratings for the appropriate source selection evaluation standards to include risk analysis, and color ratings with supporting descriptions of strengths and weaknesses.

8.2 Reporting. The predefined SDCE evaluation standards are organized into review Factors and Subfactors. Based on the above analysis and evaluation, the review team shall:

Complete an evaluation form for each Subfactor (see Attachment A).
Summarize the Subfactors and complete Factor evaluation forms (Attachment A).

These Subfactor and Factor evaluation forms shall be attached to a summary of the SDCE findings as a whole. This shall comprise the final report.

ACF SDCE PLANNING SCHEDULE

	1995						
	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV
Source Selection Evaluation Period	△ 5/1 Release RFP		△ 7/1 Receive Proposals			△ 10/1 Initial Eval Briefing	△ 10/20 Final Eval Due
SDCE Site Visit Notification Letters to Offerors					8/26		
Review of SDCE Proposal Package			△ 7/15		△ 9/14		
Competitive Range Decision/Midterm					△ 8/15		
Site Visit Reviews						△-△ 9/10-12	
Contractor Team 1						△-△ 9/16-19	
Contractor Team 2						△-△ 9/23-27	
Contractor Team 3							△ 10/1
Initial SDCE Evaluation Briefing							
Analysis & Evaluation of SDCE Findings					△ 9/14	△ 10/15	
Final SDCE Evaluation Writeup							△ 10/20

Attachment 2-2. SDCE Standards for Evaluation

Guidelines for Developing SDCE Standards for Evaluation

Standards for evaluation must be prepared to fully cover the tailored application of the SDCE. These standards are typically incorporated into the source selection evaluation guide. The SDCE standards should reflect and be consistent with the questions released with the RFP in the instructions to offerors. Examples of SDCE standards for evaluation are included in this attachment to aid the SDCE team in preparing a full set of standards.

Evaluation Standard	
Area: Technical	Factor: Software Development Capability Evaluation (SDCE)
Subfactor: Program Management (Functional Area)	Element: Program Planning and Tracking (Critical Capability Area)
Description: The offeror's proposal and site visit responses to specific questions in the ITO will be evaluated for adequacy in planning and tracking the software development integral to the system development management process.	
Standard: The offeror has proposed planning and tracking processes including procedures and comprehensive definition of the proposed approach to program planning, as well as establishing and managing the CWBS, work packages, and program schedules for software development which meet the program requirements.	

Evaluation Standard	
Area: Technical	Factor: Software Development Capability Evaluation (SDCE)
Subfactor: Systems Engineering (Functional Area)	Element: System Requirements Development, Management and Control (Critical Capability Area)
<p>Description: This element addresses the definition and allocation of requirements including verification of correctness and completeness, compatibility among development methodologies, assurance that split allocations meet top level requirements, and completeness of verification requirement definition for each performance requirement.</p>	
<p>Standard: The offeror has proposed a requirements definition and allocation process which includes specific process steps to:</p> <ul style="list-style-type: none"> a. Verify correctness and completeness prior to further allocation. b. Verify compatibility with methodologies proposed. c. Assure systems requirements allocated to multiple CIs meet the systems requirement d. Define verification requirements for each performance requirement. <p>The offeror's SDCE responses and evidence of process application substantiate the offeror's capability to meet these program requirements.</p>	

Evaluation Standard	
Area: Technical	Factor: Software Development Capability Evaluation (SDCE)
Subfactor: Software Engineering (Functional Area)	Element: Software Design (Critical Capability Area)
<p>Description: This element addresses engineering methodologies and processes to ensure design integrity characteristics are incorporated into the software engineering and related systems engineering development process.</p>	
<p>Standard: The offeror's SDCE responses define engineering processes to:</p> <ul style="list-style-type: none"> a. Use a defined design methodology which addresses static and dynamic design behavior and is consistent with other proposed methodologies. b. Include design tradeoff studies. c. Address all interfaces and provide common entities for design, code, and test. d. Ensure modularity, cohesiveness, feasibility, and coupling of the design. e. Ensure (via exit criteria) completeness and quality of the design. f. Ensure traceability between the design and requirements. <p>These processes are consistent and compliant with the program requirements as set forth in the RFP.</p>	

Evaluation Standard	
Area: Technical	Factor: Software Development Capability Evaluation (SDCE)
Subfactor: Quality Management and Product Control (Functional Area)	Element: Metrics (Critical Capability Area)
<p>Description: The metrics element addresses the process of defining, analyzing, and collecting software and related system metrics, together with the measures of functionality and quality of the software and related systems engineering products.</p>	
<p>Standard: The offeror's SDCE responses define metrics processes and product measures which meet the following program requirements:</p> <ul style="list-style-type: none"> a. The metrics processes are consistent and reflect the proposed software development process. b. The data to be collected and the intended use of the measurement data is defined. c. The metrics include variance thresholds and actions required when thresholds are exceeded. d. The metrics include critical development computer resources. e. The measurements address functionality and quality of the resultant products. 	

Evaluation Standard	
Area: Technical	Factor: Software Development Capability Evaluation (SDCE)
Subfactor: Systems Engineering (Functional Area)	Element:
<p>Description: An evaluation will be made of the offeror's systems engineering capability as it relates to software development using the Software Development Capability Evaluation. The evaluation will assess the offeror's approach to systems engineering, the ability of the offeror to successfully implement that approach, and the commitments to implement the approach. The evaluation will consider the specific processes, procedures, practices, methodologies, and the standards the offeror proposes to use. The evaluation will also consider the skills, tools, and facilities proposed by the offeror to implement their systems engineering approach.</p>	
<p>Standard: The proposal defines an adequate approach, ability to implement the approach, and commitment to use the approach for the following critical capability areas:</p> <ul style="list-style-type: none"> a. System requirements development, management, and control b. Computer systems architecture design and review process c. Supportability d. Intergroup coordination e. Systems engineering planning f. System integration and test g. Reuse 	

Attachment 2-3. CBD Announcement

As part of the <Program Acquisition Agency> overall effort to assure quality software and cost and schedule performance on the _____ project it is the intention of the <Program Acquisition Agency> to evaluate the software development, related system engineering, and management capabilities of the responding offerors and their major software subcontractors using the Software Development Capability Evaluation method developed by AFMC. The evaluations will be conducted on the basis of an analysis of the offerors' documentation submitted with the proposal, documentation requested from the offerors subsequent to proposal submittal and, if appropriate, through a site visit to the offerors' facilities. Every effort will be made by the government to schedule the site visits for mutual convenience and all offeror proprietary data will be protected. A bidders' briefing will be held at _____ location_____ on __date__ at _____ hrs.

Attachment 2-4. Site Visit Agenda

FIRST DAY

<u>Time</u>	<u>Activity</u>	<u>Responsibility</u>
7:30 a.m.	Meet at designated facility.	SDCE team and offeror team
8:00 a.m.	Convene first day of SDCE site visit. Introduce SDCE team. Identify organizations that they represent.	SDCE team
	Introduce contractor response team. Introduce any subcontractors. Description of roles in evaluation.	Offeror team
	Give contractors and subcontractors a presentation on the SDCE method.	SDCE team
9:30 a.m.	Review/update SDCE site visit agenda. Presentation on contractor company organization. Presentation on program overview and organization.	SDCE team and offeror team
10:00 a.m.	Review SDCE team prepared questions, follow up questions, and request supporting documentation to verify contractor capability.	SDCE team and offeror team
	Respond to questions and provide requested evidence and/or documentation.	Offeror team
12:00 p.m.	Break for lunch.	SDCE team and offeror team
1:00 p.m.	Reconvene with contractor and subcontractors. Continue to ask questions and request supporting documentation to verify contractor capability.	SDCE team and offeror team
3:00 p.m.	Private discussion time. Review contractor/subcontractor supporting documentation. Prepare questions for discussion.	SDCE team
5:00 p.m.	Adjourn the first day of the SDCE site visit.	SDCE team

Attachment 2-4. Site Visit Agenda (Continued)

MIDDLE DAY (Repeat for each mid-SDCE site visit day.)

<u>Time</u>	<u>Activity</u>	<u>Responsibility</u>
7:30 a.m.	Meet at designated facility.	SDCE team and offeror team
8:00 a.m.	Convene next day of SDCE site visit with contractor and subcontractors. Continue to ask questions and request supporting documentation to verify contractor capability.	SDCE team and offeror team SDCE team
	Respond to questions and provide requested evidence and/or documentation.	Offeror team
12:00 p.m.	Break for lunch.	SDCE team and offeror team
1:00 p.m.	Reconvene with contractor and subcontractors. Continue to ask questions and request supporting documentation to verify contractor capability. Respond to questions and provide requested evidence and/or documentation.	SDCE team and offeror team Offeror team
3:00 p.m.	Private discussion time. Compile data from SDCE site visit discussions. Conduct preliminary analysis of contractor/subcontractor software development capability. Prepare contractor feedback presentation.	SDCE team
5:00 p.m.	Adjourn the middle day of the SDCE site visit.	SDCE team

Attachment 2-4. Site Visit Agenda (Continued)

LAST DAY

<u>Time</u>	<u>Activity</u>	<u>Responsibility</u>
7:30 a.m.	Meet at designated facility.	SDCE team and offeror team
8:00 a.m.	Convene last day of SDCE site visit with contractor and subcontractors.	SDCE team and offeror team
8:15 a.m.	Feedback presentation to contractor on understanding of contractor's processes and capability.	SDCE team
9:45 a.m.	Contractor private discussion time.	Offeror team
10:15 a.m.	Contractor presentation to SDCE team: - Raise any contractor issues that need to be brought to the attention of the evaluation team. - Ensure that SDCE team has understood question responses correctly.	Offeror team
11:45 a.m.	SDCE site visit wrap-up and closing remarks Verify marking and/or disposal of all SDCE team analysis data.	SDCE team SDCE team and offeror team
12:00 p.m.	SDCE site visit is adjourned.	SDCE team

NOTES: SDCE team = Software Development Capability Evaluation team
Offeror team = Contractor plus subcontractor(s)

Site visit can be conducted over a period of two to four days, depending on the amount of material to be covered.

Attachment 2-5. RFP General Notice to Offerors

Depending upon whether discussion will be permitted during the source selection for < Name of Program> and on whether the Source Selection Evaluation Board (SSEB) deems it necessary to conduct a site visit in conjunction with an evaluation of the offerors' software development and management capability, a Software Development Capability Evaluation (SDCE) team may visit the offerors' sites (and the sites of their subcontractors, if appropriate).

The purpose of the site visit will be to clarify and verify information provided by the offerors in their proposals, their responses to the questions, and the supporting documentation. The team will accomplish its task by holding discussions with representatives of the offerors' software development organization and by reviewing and analyzing supporting software process and management documentation. The discussions and requested documentation will be limited to the program for which the bids are being offered and the programs that were cited as examples in the responses to the questions.

The site visit, which will last two to four days, will be conducted on dates that are mutually convenient to the offerors and the government. The SDCE team will consist of < number> experts in system and software engineering. The team will visit the site of each offeror and that of major software subcontractors. An offeror representative must accompany the SDCE team to subcontractor sites, but will not participate in the SDCE team's deliberations.

The offerors should be prepared to host the SDCE team during its visits. The team will require two meeting rooms. One room should accommodate approximately 10 people for team deliberations. The other room should accommodate at least 25 people for team and contractor discussions. Each room should have a telephone, viewgraph presentation equipment, and access to a fax and copier.

The offerors should have available, for ready access and reference, a copy of the materials that were sent to the government in response to the RFP.

The offerors will be informed prior to the site visit of the initial discussion topic agenda and should have appropriate personnel available for discussions with the SDCE team who are knowledgeable in these topics and who can speak for the offerors' organizations. It is possible that additional topics may evolve from the initial discussions and that the offerors may be asked to address these additional subjects during the course of the visit. The offerors will also be informed, prior to the visit, of the initial set of supporting documentation that the team will wish to examine. The offerors should have this documentation prepared for the team upon its arrival. Additional documentation may be requested by the team during the course of the visits.

All data provided by the offerors during the site visits will be considered "Source Selection Sensitive" or "Proprietary," as appropriate, and will not be divulged by the team to personnel outside the program acquisition team.

Prior to its departure from each offeror's site, the SDCE team will conduct an outbriefing to the offeror's personnel in which the team will convey the information that it gathered during the site visit to assure that there is a common understanding of this information. The offeror will be afforded an opportunity to respond to the team's briefing. After contract award, each offeror will receive a briefing on the findings of the SDCE team's site visit.

Attachment 2-6. RFP Instructions to Offerors**Software Development Capability Evaluation (SDCE)**

In order to assure that offerors have the software development capabilities required for the _____ program, the government will conduct a Software Development Capability Evaluation. The SDCE will be conducted with the prime offeror and proposed team members and subcontractors who have significant software development responsibility. This evaluation will be based on an analysis of the following documentation that is to be submitted with the offerors' proposals and upon verbal responses obtained during SDCE site visits, if they are conducted. For instances of teaming and prime/subcontractor arrangements among offerors, it is the responsibility of the prime offeror to determine the required information (such as proposal information, SDCE question responses, and supporting data) that is to be supplied to the government by each member of the bidding team.

The following information in direct support of the SDCE is to be submitted with the proposal and will not be limited by the specified page counts for the proposal:

1. Responses to the questions identified herewith (see tailored questions in attachment ____). Responses to the questions are encouraged to be provided directly in the documentation accompanying the proposal, such as the draft SDP, SEMP, or SEMS, or other proposal volumes. When responses to the SDCE questions are provided in other proposal information, specific page number and paragraph references should be provided with the response to the question. This approach is encouraged and is intended to reduce the SDCE preparation effort and eliminate duplication within the proposal. Responses, generally, should be concise and unambiguous, preferably not exceeding one page per response. Responses should be provided for the processes to be employed on the _____ program by the offeror and any team members or subcontractors who will provide a major portion of the software. Common processes require only one response. The response to one question may refer to the response to another, when appropriate.
2. Substantiating documents must be submitted for all planned processes, whether employed by the prime offeror, team members, or subcontractors. Examples of substantiating documents include:
 - Copies of corporate software-related procedure, process, standard, and practice descriptions that are relevant to the acquisition. (Also for each subcontractor and team member if different procedures, processes, or practices are to be employed.)
 - Copies of documents that provide evidence of use of the proposed processes (e.g., development schedules, software development plans, software requirements specifications, test and integration plans, and procedures).
3. For new processes not yet documented, describe the benefits and risks of using the new process and the rationale for employing them in lieu of examples of past application.

The following forms must be completed and submitted with the proposal (see attachment ____):

- Capability Definition Matrix (one per CCA).
- Capability Implementation Matrix (one per CCA).
- Cover Sheet for Project Sample Data for each sample submitted.

Attachment 2-6. Instructions to Offerors (Continued)

The following documents required by this RFP package should reflect the systems and software engineering processes being proposed for this program:

- Proposal SEMP, describing the relationship of the systems and software engineering processes as proposed for this program. The offeror should describe how the system and software processes are integrated and how the two functions interact in the development of a system and its software.
- Proposal SEMS, clearly indicating the temporal relationships (both sequential and parallel) of the system and software functions and showing that adequate time has been allocated for all required processes. Completion criteria for events should include system and software engineering process step completions.
- Proposal SDP. In addition to the information required by the applicable DID for the SDP, the SDP should include descriptions of the software engineering processes requested by the SDCE questions. This is essential to clarify the offeror's intent to apply the processes and discipline to this program.

Note: The following attachments should be included by the program office at this point:

Tailored SDCE Questions
Capability Definition Matrix (see attachment 3-1)
Capability Implementation Matrix (see attachment 3-2)
Cover Sheet for Project Sample Data (see attachment 3-3)

Attachment 2-7. Site Visit Notification Letter

REPLY TO Air Force BIG/Software Program Office
ATTN OF 4375 Chidlaw Road, Suite X
Wright-Patterson AFB OH 45433-5006

SUBJECT Software Development Capability Evaluation (SDCE) Site
Visit In Support Of BIG/Software PROGRAM

TO M.R. Contractor
BIG/Software Program Office
Contracting Company Name

1. As a part of the source selection evaluation for the BIG/Software PROGRAM, the BIG/Software Source Selection Evaluation Board (SSEB) plans to conduct an SDCE site visit in conjunction with the evaluation of each offeror's software engineering development and management capabilities.
2. The SDCE site visit will be conducted over a period of [state the number of days] days at your facility. Support requirements for the SDCE site visit include: a dedicated conference room, respite facilities, and access to telephones, fax, and copying capabilities.
3. If more than [state the percentage] of the software development effort, as proposed by your team on the BIG/Software PROGRAM, will be shared, an approach to including your software development teaming partners and subcontractors in the SDCE site visit should be forwarded to this office within five days for approval.
4. As coordinated over the telephone XX Month 19XX by M.R. Contractor Point of Contact, the [Contracting Company Team Name] SDCE site visit is planned to begin at 0800 on XX Month 19XX, two weeks from today.
5. This office will contact you within five days following receipt of item 3, above, to discuss and coordinate your SDCE site visit teaming approach.

FOR THE COMMANDER

Attachment 2-8. Site Visit Feedback Briefing

<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>SDCE SITE VISIT FEEDBACK</p> <p style="text-align: center;"><i>for the</i></p> <p style="text-align: center;"><i>[Name of Bidder/Team]</i></p> <p style="text-align: center;">ACQUISITION</p> <p style="text-align: center;"><i>DRAFT BRIEFING TEMPLATE</i></p>	<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>DISCUSSION AREAS</p> <ul style="list-style-type: none"> • What cannot be discussed at this Feedback Briefing • Statement of understanding of bidder's software development processes • Objective observations of data gathered during site visit
<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>WHAT WE CANNOT DISCUSS AT THIS FEEDBACK BRIEFING</p> <ul style="list-style-type: none"> • How these SDCE results will factor into this source selection. • Scoring of this SDCE, in the form of "Color Coding" for the acquisition. • Comparison of your SDCE results to other bidders' results. • Comparison of your SDCE results to the Eval Standard(s). • Our value judgment on what we have observed here. • Anticipated CRs and DRs that may be generated as a result of the site visit. 	<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>OUR UNDERSTANDING OF YOUR SOFTWARE DEVELOPMENT PROCESSES</p> <ul style="list-style-type: none"> • Software development process • Software development support processes • Software development environment • Software development tools and methodologies
<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>OBJECTIVE DATA GATHERING OBSERVATIONS</p> <ul style="list-style-type: none"> • Inconsistent Responses • Incomplete Responses • Discrepancies • New Technologies 	

Attachment 2-9. Example SDCE Findings Briefing

<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>Software Development Capability Evaluation (SDCE)</p> <p>Results</p>	<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>SDCE RATINGS</p> <p>PROPOSAL RATING: YELLOW</p> <p>RISK RATING: MEDIUM</p>
<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>SUMMARY RESULTS</p> <p>STRONG:</p> <ul style="list-style-type: none"> • None <p>ACCEPTABLE:</p> <ul style="list-style-type: none"> • Program Management • Software Engineering • Quality Management and Product Control • Program Specific Technologies (AI) <p>WEAK:</p> <ul style="list-style-type: none"> • Systems Engineering • Organizational Resources & Program Support 	<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>PROGRAM MANAGEMENT</p> <p>STRENGTHS:</p> <ul style="list-style-type: none"> • Organizational responsibilities well defined • Detailed planning procedures • Strong statusing system in place <p>WEAKNESSES:</p> <ul style="list-style-type: none"> • Ability to develop acceptable work packages • Subcontract management process not well defined • Incomplete risk analysis
<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>SYSTEMS ENGINEERING</p> <p>STRENGTHS:</p> <ul style="list-style-type: none"> • Robust requirements process • Documented process in place <p>WEAKNESSES:</p> <ul style="list-style-type: none"> • Critical dependencies between development groups not identified • Inadequate plans for ensuring test facilities and tools are in place • Lack of an approach for ensuring software reliability and maintainability 	<p>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</p> <p>SOFTWARE ENGINEERING</p> <p>STRENGTHS:</p> <ul style="list-style-type: none"> • Documented process for developing cost and schedule estimates • Excellent Software Development Plan <p>WEAKNESSES:</p> <ul style="list-style-type: none"> • No formal method for managing changes to software requirements • Minimal software coding standards • Lack of a comprehensive test strategy

Attachment 2-9. Example SDCE Findings Briefing (Continued)

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION QUALITY MANAGEMENT AND PRODUCT CONTROL	SOFTWARE DEVELOPMENT CAPABILITY EVALUATION ORGANIZATIONAL RESOURCES AND PROJECT SUPPORT
STRENGTHS: <ul style="list-style-type: none">• Strong, independent SQA organization• Comprehensive SQA audit process• Excellent peer review process WEAKNESSES: <ul style="list-style-type: none">• Lack of procedures for tracking software deficiencies to closure• Inadequate plan for establishing software development library	STRENGTHS: <ul style="list-style-type: none">• Well defined and institutionalized software development process WEAKNESSES: <ul style="list-style-type: none">• Critical training needs not addressed• Lack of a software staffing approach• Little technology assessment and transition capabilityFew active process improvement efforts
SOFTWARE DEVELOPMENT CAPABILITY EVALUATION ARTIFICIAL INTELLIGENCE TECHNOLOGY	SOFTWARE DEVELOPMENT CAPABILITY EVALUATION RISK ASSESSMENT
STRENGTHS: <ul style="list-style-type: none">• AI development process integrated into overall development process• Strong experience base with AI• AI tools in place WEAKNESSES: <ul style="list-style-type: none">• No test strategy for AI• No demonstrations or prototypes planned to prove the technology	<ul style="list-style-type: none">• The offeror's software development process is well documented and institutionalized• The critical dependencies between the hardware and software development efforts have not been identified• Inadequate plans for ensuring facilities and tools will be in place to support the initial software development and testing

Attachment 2-10. Metrics Example

SDCE Method Improvement Metrics

Metric	Specific Program Application Information
1. Contract Type and Value	
Acquisition Organization (e.g. Center)	Aeronautical Systems Center
Program Office Symbol	ASC/YA
Program Name	Advanced Combat Fighter
Domains of Application (e.g. C3I, A/C, Space)	Aeronautical Aircraft Systems
Subsystem Domains, with software	Avionics, Flight & Engine Controls, Air Vehicle Management, Training Systems, Automatic Test Equipment, Software Engineering Environments
Estimated Time Frame of Source Selection (e.g. May - Aug. 93)	May - Nov. 1995
Acquisition Phase In Which Source Selection Occurred (Dem/Val, EMD, Major Modifications)	EMD
Estimated Dollar Value of the Program (Development Contract)	\$30 B
Estimated Dollar Value of the Software (Developed Under the Contract)	\$6 B
Software Size (KSLOC)	4000 KSLOC
2. SDCE Team Composition	
Number of Team Members	10
Number of Core Team Members	4
Number of SDCE Trained Team Members	10 (2 Day SDCE Seminar)
Was Contracts (PCO) on the Team?	Yes
Did a Single Team Do All the Site Visits? If not, Explain Approach.	Yes
Identify Functional Specialty/Disciplines Represented on the Team	Avionics Engineering, Software Engineering, Radar Engineering, Logistics, Configuration Management, Financial Management, CMD, and Data Management
Team Leader	
Name	Mr. A. B. Seeze
Rank or Grade	GM-14
Years of Acquisition/Development Experience	22
Years of Software Experience	20
Number of Previous SDCEs (or SDCCRs/SCEs)	3 SDCCRs
SPO Stakeholder? (Y/N)	Y

Attachment 2-10. Metrics Example (Continued)

SDCE Method Improvement Metrics

	1	2	3	4	5
Additional Team Members					
Core Team Member (Y/N)	Y	Y	Y	N	N
Rank or Grade	GM 14	Maj.	GS 13	GS 12	Capt.
Years of Acquisition/Development Experience	25	18	12	9	10
Years of Software Experience	25	0	10	1	4
SPO Stakeholder (Y/N)	N	Y	Y	Y	Y
Additional Team Members	6	7	8	9	10
Core Team Member (Y/N)	Y	Y	Y	N	
Rank or Grade	GS 13	GS 12	Capt.	GS 11	
Years of Acquisition/Development Experience	15	8	10	5	
Years of Software Experience	0	4	0	0	
SPO Stakeholder (Y/N)	Y	N	Y	N	
3. Offerors Evaluated					
Number Of Offerors/Teams Submitting Proposals	3 Proposals				
Number of Prime/Associate Offerors (Total of All Teams)	3 Primes and 3 Associates				
Number of Subcontractors Evaluated (Total of All Teams)	3 Subcontractors				
4. SDCE Site Visits					
Were site visits Conducted (Y/N)	Y				
Average duration of Visit (Days)	3				
Number of Sites	3 Combined prime, associate, and Subs				
How Many Subcontractor Site Visits Were Conducted?	See Above				
5. Effort Required to Implement SDCEs (Estimated)(Person Days)					
SDCE Gov. Team Effort					
Preparation	30				
Site Visits (Include Travel) (Per Offeror and Sum Total of All Visits)	35, 105				
Evaluation and Wrap-up (Including Feedback)	45				
Contractor Offeror Effort (Per Offeror)	1	2	3	4	
Preparation (Including Proposal)	300	210	340		
Site Visits	40	50	45		
Follow-on SDCE Support Including Feedback	15	24	22		
Was This the Offeror's First SDCE?					
Contractor Offeror Effort (Per Offeror)	5	6	7	8	
Preparation (Including Proposal)					
Site Visits					
Follow-on SDCE Support Including Feedback					
Was This the Offeror's First SDCE?					

Attachment 2-10. Metrics Example (Continued)

SDCE Method Improvement Metrics

6. Placement of the SDCE Within Source Selection Structure	
Area Factor or Subfactor (Identify Structure from Area Down to SDCE Placement)	Factor Under the Technical Area
Other - Describe How Incorporated If Other Than Area, Factor, Subfactor	NA
How Was The SDCE Integrated With the Other Source Selection Areas?	Results were coordinated with Management, Cost, Logistics, and other Technical Areas. Also results were compared with and integrated with evaluation of the SDP, SEMP, & SEMS
7. Contractor Feedback	
Was Site Visit Feedback Provided On-Site? (Y/N). Comment	Yes, IAW the AFMCPAM 63-103. Offerors appreciated feedback.
Was Feedback Provided After Contract Award?	Yes
To Winners (Y/N), Comment	Yes Feedback included opportunities to improve the process on the contract
To Losers? (Y/N), Comment	Yes This was helpful to the losers
8. Tailoring of the SDCE	
Were the Model Criteria and Questions Tailored, i.e., Additions, Modifications, or Deletions? (Y/N) (Please Provide All Tailoring as an Attachment)	Yes [Tailoring to be provided later]
Were the Application Guidelines Tailored (Y/N) (Please Provide Significant Tailoring as an Attachment)	Yes [Tailoring to be provided later]

Attachment 2-10. Metrics Example (Continued)

SDCE Method Improvement Metrics

9. Lessons Learned (With the SDCE Method)	
What were the Strengths of the Method?	Well organized. Helpful templates and guidance. Good questions.
What Deficiencies Were Discovered?	Criteria could be strengthened, not always clear whether response was adequate. [Specifics attached - Later]
What Limitations Were Encountered?	Not enough time to do comprehensive SDCE site visits. Streamlined source selection, too short.
What Worked, Didn't Work?	Most worked Some questions were not helpful. Tailored questions helped. Possibly too many team members.
Suggested Changes to SDCE Pamphlet (Areas Where Guidance Was Insufficient or Unclear.)	Data collection forms need improvement. See attached changes. [Specifics to be provided later]
Suggestions for Improvement (Effectiveness and Efficiency)	Reduce the model question set in total. Add wider coverage into program control and more on test and integration.

Attachment 2-10. Metrics Example (Continued)

Source Selection and Program Execution Metrics

Identify Specific Contributions to:	
Source Selection Evaluation (Relative Impact/Influence of SDCE)	The SDCE evaluation identified significant strengths, weaknesses, and risks. These were reported up through the SSEB chairman to the SSA. They were briefed by the SDCE chairman.
<u>Commitment to Applying Process In the: Software Development Plan</u>	<u>SDP</u> : The draft SDP was modified to incorporate specific testing steps which were clarified as a result of the SDCE site visit. These are critical to process commitment.
<u>System Engineering Master Plan</u>	<u>SEMP</u> : The SDCE process enabled the team to identify shortfalls in the SEMP pertaining to the requirements allocation process and the integration and test process. The SEMP was revised as a result of SDCE CR's to reflect these processes.
<u>Systems Engineering Master Schedule</u>	<u>SEMS</u> : Key software development processes and completion criteria were added to the SEMS event completion criteria.
Other Capability, Capacity, or Process	The SDCE process uncovered discrepancies in development schedules, requirements process, software sizing estimates, incremental software development process, and CM process. These were resolved through site visits and CR's.
Offeror Feedback Regarding the Value of the SDCE (From Their Perspective)	All offerors stated the SDCE was helpful in getting their team process defined and coordinated among participants. They also felt the SDCE gave them insight into the SPO requirements and concerns. They felt it was very beneficial to have a dialogue with senior systems and software engineering and management program stakeholders.

Attachment 2-11. Feedback Session Agenda - Successful Bidder

FIRST DAY

<u>Time</u>	<u>Activity</u>
8:00 a.m.	Meet at designated facility.
8:10 a.m.	Introduction of the SSEB and SPO team and titles.
8:20 a.m.	Introduction of the contractor's team and any subcontractors along with titles.
8:30 a.m.	Overview of the total program, emphasizing the software component.
8:40 a.m.	Description of why the SDCE was used.
8:50 a.m.	Overview of the observations of the SDCE. This will be generated from the SDCE Results and SDCE Findings Briefing given to the SSEB.
9:00 a.m.	Detailed review of the evaluation observations provided by the evaluation team for each of the prime contractors and subcontractors. This will be based on the data recorded in the Capability Definition Matrix and the Capability Evaluation Matrix. This will be much more detailed for contracts awarded without discussions since this is the first discussion of this data.
10:00 a.m.	Summary of the contracting agency's assessment of this offeror's (prime contractor and subcontractor) software development strengths, weaknesses, and risks as provided from the SDCE and other directly related aspects of the proposal and the source selection evaluation. These data will be generated from the CCA Score Sheet and the FA Score Sheet.
11:00 a.m.	Discussion of presented data.
11:30 a.m.	Presentation by the contractor evaluating the SDCE and providing the requested SDCE metrics.
12:00 p.m.	Break for lunch
1:00 p.m.	Develop an updated and mutually agreed to SDP, SEMP, and SEMS and commit to use the proposed processes and resources. At this point a red-lined copy of these documents should be held by both the contacting agency and the contractor(s).
5:00 p.m.	Adjourn for day

SECOND DAY

<u>Time</u>	<u>Activity</u>
8:00 a.m.	Agreement between the contracting agency and the contractor on the focus areas for the process improvement program that will be implemented during the contract execution. This is developed from the CCA Score Sheet and the FA Score Sheet.
10:00 a.m.	Agreement between the contracting agency and the contractor on the items for inclusion in a risk management program. This is developed from the FA Score Sheet.
12:00 p.m.	Adjourn

Attachment 2-12. Sample Presentation to Successful Bidder

<p style="text-align: center;">SDCE FEEDBACK SESSION</p> <p style="text-align: center;">for the</p> <p style="text-align: center;">[Name of Bidder/Team]</p> <p style="text-align: center;">ACQUISITION</p> <p style="text-align: center;">DRAFT BRIEFING TEMPLATE FOR SUCCESSFUL BIDDER</p> <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.1</p>	<p style="text-align: center;">FIRST DAY AGENDA</p> <ul style="list-style-type: none"> • Introductions • Program Overview • Why the SDCE was used • Overview of the Observations during the SDCE • Review of the Evaluation Observations • Summary of Assessment strengths, weaknesses, and risks • Discussion of Data • Contractor Evaluation of SDCE and Metrics • Break for Lunch • Side meetings to develop red lined SDP, SEMP, SEMS <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.2</p>												
<p style="text-align: center;">SECOND DAY AGENDA</p> <ul style="list-style-type: none"> • Develop list of Process Improvements to be accomplished during the program • Develop list of Risks to be included in Risk management program <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.3</p>	<p style="text-align: center;">SSEB SDCE TEAM</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 33.33%;"><u>NAME</u></th> <th style="text-align: left; width: 33.33%;"><u>TITLE</u></th> <th style="text-align: left; width: 33.33%;"><u>Representing</u></th> </tr> </thead> <tbody> <tr> <td>J. Doe</td> <td>Lt. Col.</td> <td>SPO</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td></td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> <td></td> </tr> </tbody> </table> <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.4</p>	<u>NAME</u>	<u>TITLE</u>	<u>Representing</u>	J. Doe	Lt. Col.	SPO	•			•		
<u>NAME</u>	<u>TITLE</u>	<u>Representing</u>											
J. Doe	Lt. Col.	SPO											
•													
•													
<p style="text-align: center;">CONTRACTOR TEAM</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; width: 33.33%;"><u>Name</u></th> <th style="text-align: left; width: 33.33%;"><u>Area of Responsibility</u></th> </tr> </thead> <tbody> <tr> <td>J. Buck</td> <td>S/W Requirements</td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> </tr> <tr> <td style="text-align: center;">•</td> <td></td> </tr> </tbody> </table> <p style="text-align: center;">(Provided by Bidder)</p> <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.5</p>	<u>Name</u>	<u>Area of Responsibility</u>	J. Buck	S/W Requirements	•		•		<p style="text-align: center;">PROGRAM OVERVIEW</p> <ul style="list-style-type: none"> • The XX program does. . . . • The software in the program does. . . . • The software development activity includes. . . . • The software development is supported by. . . (TOOLS, SEE) <p style="font-size: small; margin-top: 10px;">BIDDER/TEAM NAME</p> <p style="font-size: small; margin-top: 10px;">Date -- P.6</p>				
<u>Name</u>	<u>Area of Responsibility</u>												
J. Buck	S/W Requirements												
•													
•													

Attachment 2-12. Sample Presentation to Successful Bidder (Continued)

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

WHY THE SDCE WAS USED
<p>The SDCE evaluates the offeror's ability to develop the s/w required by the RFP. The primary intent is to increase the probability of selecting a fully capable bidder, with the capacity to perform the program within the program baseline.</p>

BIDDER/TEAM NAME _____ Date -- P.7

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

OVERVIEW OF THE OBSERVATIONS
<p>DISCUSSION AREAS</p> <ul style="list-style-type: none"> • What cannot be discussed at this Briefing • Statement of understanding of offeror's software development processes • Objective observations of data gathered during site visit

BIDDER/TEAM NAME _____ Date -- P.8

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

WHAT WE CANNOT DISCUSS AT THIS BRIEFING...
<ul style="list-style-type: none"> • How the SDCE results factored into this source selection. • Scoring of the SDCE, in the form of "Color Coding" for the acquisition. • Comparison of your SDCE results to other bidder's results.

BIDDER/TEAM NAME _____ Date -- P.9

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

OVERVIEW OF THE OBSERVATIONS
<ul style="list-style-type: none"> • Finding 1 • Finding 2 • •

BIDDER/TEAM NAME _____ Date -- P.10

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

DETAILED REVIEW OF THE EVALUATION OBSERVATIONS
<ul style="list-style-type: none"> • Observation 1 • Observation 1 • •

BIDDER/TEAM NAME _____ Date -- P.11

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

SUMMARY OF STRENGTH, WEAKNESSES AND RISKS

BIDDER/TEAM NAME _____ Date -- P.12

Attachment 2-12. Sample Presentation to Successful Bidder (Continued)

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

ANSWERS TO PREVIOUSLY SUBMITTED QUESTIONS

- Q1
 - A1
- Q2
 - A1

BIDDER/TEAM NAME

Date -- P.13

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

CONTRACTOR EVALUATION OF SDCE

- Effort for
 - Planning and Preparation
 - Site visit support
 - Follow on support
- Positive values of SDCE
- Negative aspects of SDCE

BIDDER/TEAM NAME

Date -- P.14

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

RESULTS OF SDP, SEMP, SEMS SIDE MEETINGS

BIDDER/TEAM NAME

Date -- P.15

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

LIST OF PROCESS IMPROVEMENTS TO BE INCLUDED IN PROGRAM

- Improvement 1
- Improvement 2
-
-

BIDDER/TEAM NAME

Date -- P.16

Attachment 2-13. Feedback Session Agenda - Unsuccessful Bidder

<u>Time</u>	<u>Activity</u>
8:00 a.m.	The arrival time for escorting from the building entrance to the meeting room, including issuing any badges.
8:15 a.m.	Introduction of the SSEB SDCE team and titles.
8:25 a.m.	Introduction of the offeror's team and any subcontractors along with titles.
8:35 a.m.	Overview of the program emphasizing the software component.
8:45 a.m.	Description of why the SDCE was used.
8:55 a.m.	Overview of the observations of the SDCE. This will be generated from the SDCE Results and the SDCE Findings Briefing given to the SSEB.
9:05 a.m.	Review of the evaluation observations provided by the evaluation team. This will be based on the data recorded in the Capability Definition Matrix and the Capability Evaluation Matrix.
9:35 a.m.	Summary of the contracting agency's assessment of this offeror's software development strengths, weaknesses, and risks as related to the SDCE portion of the proposal and the source selection evaluation. These data will be generated from the CCA Score Sheet and the FA Score Sheet. All strengths and weaknesses should be discussed.
10:35 a.m.	Discussion of presented data and answers to previously submitted questions. The government reserves the right to defer answering questions in writing to a later time.
11:00 a.m.	Presentation by the contractor evaluating the SDCE and providing the requested SDCE metrics.
11:30 a.m.	Adjourn meeting.

Attachment 2-14. Sample Presentation to Unsuccessful Bidder

SDCE FEEDBACK SESSION

for the

**[Name of Bidder/Team]
ACQUISITION**

DRAFT BRIEFING TEMPLATE
FOR UNSUCCESSFUL BIDDER

BIDDER/TEAM NAME

Date -- P.1

AGENDA

- Introductions
- Program Overview
- Why the SDCE was used
- Overview of the Observations during the SDCE
- Review of the Evaluation Observations
- Summary of Bidder's strengths, weaknesses, and risks
- Answers to previously submitted questions
- Contractor evaluation of SDCE and Metrics

BIDDER/TEAM NAME

Date -- P.2

SSEB SDCE TEAM

<u>NAME</u>	<u>TITLE</u>	<u>Representing</u>
J. Doe	Lt. Col.	SPO
•		
•		

BIDDER/TEAM NAME

Date -- P.3

CONTRACTOR TEAM

<u>Name</u>	<u>Area of Responsibility</u>
J. Buck	S/W Requirements

(Provided by Bidder)

BIDDER/TEAM NAME

Date -- P.4

PROGRAM OVERVIEW

- The XX program does. . . .
- The software in the program does. . . .
- The software development activity includes. . . .
- The software development is supported by. . . (TOOLS, SEE)

BIDDER/TEAM NAME

Date -- P.5

WHY THE SDCE WAS USED

The SDCE evaluates the offeror's ability to develop the s/w required by the RFP. The primary intent is to increase the probability of selecting a fully capable bidder, with the capacity to perform the program within the program baseline.

BIDDER/TEAM NAME

Date -- P.6

Attachment 2-14. Sample Presentation to Unsuccessful Bidder (Continued)

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

OVERVIEW OF THE OBSERVATIONS

DISCUSSION AREAS

- What cannot be discussed at this Briefing
- Statement of understanding of bidder's software development processes
- Objective observations of data gathered during site visit

BIDDER/TEAM NAME _____ Date -- P.7

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

WHAT WE CANNOT DISCUSS AT THIS BRIEFING . . .

- How the SDCE results factored into this source selection.
- Scoring of the SDCE, in the form of "Color Coding" for the acquisition.
- Comparison of your SDCE results to other bidder's results.
- Comparison of your SDCE results to the Eval Standard(s).

BIDDER/TEAM NAME _____ Date -- P.8

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

OVERVIEW OF THE OBSERVATIONS

- Finding 1
- Finding 2
-
-

BIDDER/TEAM NAME _____ Date -- P.9

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

DETAILED REVIEW OF THE EVALUATION OBSERVATIONS

- Observation 1
- Observation 1
-
-

BIDDER/TEAM NAME _____ Date -- P.10

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

SUMMARY OF STRENGTH, WEAKNESSES AND RISKS

BIDDER/TEAM NAME _____ Date -- P.11

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

ANSWERS TO PREVIOUSLY SUBMITTED QUESTIONS

- Q1
 - A1
- Q2
 - A1

BIDDER/TEAM NAME _____ Date -- P.12

SOFTWARE DEVELOPMENT CAPABILITY EVALUATION

CONTRACTOR EVALUATION OF SDCE

- Effort for
 - Planning and Preparation
 - Site visit support
 - Follow on support
- Positive values of SDCE
- Negative aspects of SDCE

BIDDER/TEAM NAME _____ Date -- P.13

ATTACHMENT 3. SDCE DATA COLLECTION AND ANALYSIS FORMS

This attachment contains blank worksheets for use during various analysis tasks of the SDCE process. These worksheets may be reproduced as needed for a given source selection.

The following list defines the worksheets included in this attachment and shows the primary paragraph in the body of this pamphlet that describes the use of each worksheet.

<u>Volume</u>	<u>Section</u>	<u>Attachment</u>	<u>Form Description</u>
1	4.I	3-1	Capability Definition Matrix *
1	4.I	3-2	Capability Implementation Matrix *
1	4.I	3-3	Cover Sheet for Project Sample Data *
1	4.I	3-4	Capability Evaluation Matrix
1	4.I	3-5	CCA Score Sheet
1	4.I	3-6	FA Score Sheet
1	4.I	3-7	SDCE Score Sheet
1	4.G	3-8	Structured Note Sheet
1	4.K	3-9	Metrics Collection
1	4.C	3-10	SDCE Team Activity Worksheet / Checklist of Items to Prepare

* To be filled in by the offeror

Attachment 3-1

COMMITMENT	INSTITUTIONALIZATION	LOCATION OF CAPABILITY DESCRIPTION	LIST THE TITLES OF REFERENCE DOCUMENTS AND THE LOCATION OF THE DESCRIPTION WITHIN THE DOCUMENT														
			QUESTIONS	PROPOSAL AND SDCE	PROJECT PROCEDURE	COMPANY PROCEDURE	OR STANDARD	PROJECT PROCEDURE	COMPANY PROCEDURE	OR STANDARD	PROJECT PROCEDURE	COMPANY PROCEDURE	MASTER SCHEDULE	SYSTEMS ENGINEERING	MASTER PLAN	SYSTEMS ENGINEERING	MASTER PLAN
FA	CCA	CRITICAL CAPABILITIES:															

Attachment 3-2

CAPABILITY IMPLEMENTATION MATRIX	PROJECTS IMPLEMENTED ON AND LEVEL OF INTEGRATION									
	NEW CAPABILITY									
OFFEROR	CRITICAL CAPABILITIES:									
	FA	CCA								
N	New Capability									
I	Implemented on Project									
S	Implemented and Sample Provided									
Page	Page _____ of _____ Pages									

Version 1.0

Attachment 3-3**Cover Sheet for Project Sample Data**

Offeror: _____

Sample Project Name: _____

Title of Sample: _____

Critical Capability: _____

ATTRIBUTES	PROPOSED PROJECT	SAMPLE PROJECT
Application Domain		
Product Type		
Acquisition Phase		
Software Development Phase		
Award Date		
Contract Duration		
Subcontractors		
Software KSLOC		
Software Team Size		
Language(s) and Percentage		
Target Processor(s)		
Applicable MIL-STDs		

Version 1.0

Attachment 3-4

CAPABILITY EVALUATION MATRIX	OFFEROR	CRITICAL CAPABILITIES:											Page ____ of ____ Pages
			FA	CCA	W - Weak	H - High	M - Moderate	L - Low	NA - Not Applicable	NE - Not Evaluated	S - Strong	A - Acceptable	
		Compatibility of Approach											
		Among Team Members and Primes/Subs is Demonstrated											
		Proposed Approach is Consistent With the Other Volumes of the Proposal											
		Responsibility for the Proposed Approach is Identified											
		Proposed Approach is Documented in Contractual Vehicles (SDP, SEMP, SEMS)											
		Proposed Approach Meets the SDCE Model Criteria											
EVALUATION CONSIDERATIONS		For New Capabilities, an Adequate Analysis of Benefits vs Risks is Provided											
		Samples are Relevant and Demonstrate the Capability											
		This Capability has Been Integrated With Other Proposed Capabilities											
VALIDATION CONSIDERATIONS		Benefits vs Risks is Provided											
RISK CONSIDERATIONS		Probabilistic Failure for the Proposed Approach											
		Potential Impact of Failure for the Proposed Approach											
		Correctability of the Proposed Approach											

Attachment 3-5

CCA SCORE SHEET OFFEROR _____ FA CCA	CRITICAL CAPABILITIES: RISK ASSESSMENT CAPABILITY ASSESSMENT	GENERAL COMMENTS ON CRITICAL CAPABILITY AREA (Strengths, Weaknesses, and Risks) SPECIFIC COMMENTS ON CRITICAL CAPABILITIES (Strengths, Weaknesses, and Risks)	S - Strong A - Acceptable W - Weak	H - High M - Moderate L - Low	Version 1.0 Page ____ of ____ Pages
					CCA OVERALL SCORE

Attachment 3-6

<p>FA SCORE SHEET</p> <p>OFFEROR _____ FA _____</p>	<p>Critical Capability Areas:</p> <p>_____</p>	<p>Assessability Assessment</p> <p>_____</p>	<p>Risk Assessment</p> <p>_____</p>	<p>Comments on Functional Area (Strengths, Weaknesses, and Risks)</p> <p>_____</p>	<p>Comments on Critical Capability Areas (Strengths, Weaknesses, and Risks)</p> <p>_____</p>	<p>Version 1.0</p> <p>S - Strong H - High A - Acceptable M - Moderate W - Weak L - Low</p> <p>Page _____ of _____ Pages</p>
--	---	--	---	--	--	---

Attachment 3-7

Attachment 3-8**SOFTWARE DEVELOPMENT CAPABILITY EVALUATION**
STRUCTURED NOTE SHEET

Company/Team Name _____ Date: / /
Responder's Name(s) _____ Time: :

Question:**Answer:****Additional Documentation Reviewed:**

Evaluator's Name _____ Worksheet Number _____

Attachment 3-9. Metrics Collection

SDCE Method Improvement Metrics

Metric	Specific Program Application Information
1. Contract Type and Value	
Acquisition Organization (e.g. Center)	
Program Office Symbol	
Program Name	
Domains of Application (e.g. C3I, A/C, Space)	
Subsystem Domains, with software	
Estimated Time Frame of Source Selection (e.g. May - Aug. 93)	
Acquisition Phase In Which Source Selection Occurred (Dem/Val, EMD, Major Modifications)	
Estimated Dollar Value of the Program (Development Contract)	
Estimated Dollar Value of the Software (Developed Under the Contract)	
Software Size (KSLOC)	
2. SDCE Team Composition	
Number of Team Members	
Number of Core Team Members	4
Number of SDCE Trained Team Members	10 (2 Day SDCE Seminar)
Was Contracts (PCO) on the Team?	Yes
Did a Single Team Do All the Site Visits? If not, Explain Approach.	Yes
Identify Functional Specialty/Disciplines Represented on the Team	Avionics Engineering, Software Engineering, Radar Engineering, Logistics, Configuration Management, Financial Management, CMD, and Data Management
Team Leader	
Name	
Rank or Grade	
Years of Acquisition/Development Experience	
Years of Software Experience	
Number of Previous SDCEs (or SDCCRs/SCEs)	
SPO Stakeholder? (Y/N)	

Attachment 3-9. Metrics Collection (Continued)

SDCE Method Improvement Metrics

Additional Team Members	1	2	3	4	5
Core Team Member (Y/N)					
Rank or Grade					
Years of Acquisition/Development Experience					
Years of Software Experience					
SPO Stakeholder (Y/N)					
Additional Team Members	6	7	8	9	10
Core Team Member (Y/N)					
Rank or Grade					
Years of Acquisition/Development Experience					
Years of Software Experience					
SPO Stakeholder (Y/N)					
3. Offerors Evaluated					
Number Of Offerors/Teams Submitting Proposals					
Number of Prime/Associate Offerors (Total of All Teams)					
Number of Subcontractors Evaluated (Total of All Teams)					
4. SDCE Site Visits					
Were site visits Conducted (Y/N)					
Average duration of Visit (Days)					
Number of Sites					
How Many Subcontractor Site Visits Were Conducted?					
5. Effort Required to Implement SDCEs (Estimated)(Person Days)					
SDCE Gov. Team Effort					
Preparation					
Site Visits (Include Travel) (Per Offeror and Sum Total of All Visits)					
Evaluation and Wrap-up (Including Feedback)					
Contractor Offeror Effort (Per Offeror)	1	2	3	4	
Preparation (Including Proposal)					
Site Visits					
Follow-on SDCE Support Including Feedback					
Was This the Offeror's First SDCE?					
Contractor Offeror Effort (Per Offeror)	5	6	7	8	
Preparation (Including Proposal)					
Site Visits					
Follow-on SDCE Support Including Feedback					
Was This the Offeror's First SDCE?					

Attachment 3-9. Metrics Collection (Continued)

SDCE Method Improvement Metrics

6. Placement of the SDCE Within Source Selection Structure	
Area Factor or Subfactor (Identify Structure from Area Down to SDCE Placement)	
Other - Describe How Incorporated If Other Than Area, Factor, Subfactor	
How Was The SDCE Integrated With the Other Source Selection Areas?	
7. Contractor Feedback	
Was Site Visit Feedback Provided On-Site? (Y/N). Comment	
Was Feedback Provided After Contract Award?	
To Winners (Y/N), Comment	
To Losers? (Y/N), Comment	
8. Tailoring of the SDCE	
Were the Model Criteria and Questions Tailored, i.e., Additions, Modifications, or Deletions? (Y/N) (Please Provide All Tailoring as an Attachment)	
Were the Application Guidelines Tailored (Y/N) (Please Provide Significant Tailoring as an Attachment)	

Attachment 3-9. Metrics Collection (Continued)

SDCE Method Improvement Metrics

9. Lessons Learned (With the SDCE Method)	
What were the Strengths of the Method?	
What Deficiencies Were Discovered?	
What Limitations Were Encountered?	
What Worked, Didn't Work?	
Suggested Changes to SDCE Pamphlet (Areas Where Guidance Was Insufficient or Unclear.)	
Suggestions for Improvement (Effectiveness and Efficiency)	

Attachment 3-9. Metrics Collection (Continued)

Source Selection and Program Execution Metrics

Identify Specific Contributions to:	
Source Selection Evaluation (Relative Impact/Influence of SDCE)	
Commitment to Applying Process In the: <u>Software Development Plan</u>	<u>SDP:</u>
<u>System Engineering Master Plan</u>	<u>SEMP</u>
<u>Systems Engineering Master Schedule</u>	<u>SEMS</u>
Other Capability, Capacity, or Process	
Offeror Feedback Regarding the Value of the SDCE (From Their Perspective)	

Attachment 3-10**SDCE Team Activity Worksheet
Checklist of Items to Prepare****A Determine Applicability**

- Awareness Briefing
- Familiarization Briefing
- SDCE Portion of the Acquisition Strategy
- Preliminary SDCE Estimates:
 - schedule
 - effort and cost

B Select and Prepare Team

- List of Required Evaluator Qualifications
- List of Team Members
 - leader
 - core team
 - support team
- Team Training Materials

C Prepare Plan and Schedule

- SDCE Overall Schedule
- Tentative Site Visit Schedule
- SDCE Portion of the Source Selection Plan
- SDCE Portion of the Source Selection Evaluation Guide
- SDCE Input to the Evaluation Standards
- List of SDCE Data and its Planned Disposition

D Tailor SDCE, Select Criteria and Questions

- Estimated Software Profile
- Selected List of CCAs
- Selected List of CCs
 - criteria
 - questions
- Additional CCAs
 - basic definition
 - list of new CCs
- Additional CCs
 - basic definition
 - new criteria
 - new questions
- Numbers of Pieces of Evidence Required
- List of Additional Team Skills Required
- Report Back to AFMC on Tailoring Additions Required

E Prepare RFP and Instructions

- SDCE Portion of the CBD Announcement
- SDCE Portion of the Bidders' Briefing
- SDCE Portion of the GNTO
 - site visit
 - data handling
- SDCE Portion of the ITO
 - request for responses to questions
 - request for substantiating evidence
 - request for company practice/process data
 - instructions on consistency and relationship to the SDP, SEMP, and SEMS
- SDCE-Related Material in the SOW and CDRL

Attachment 3-10 (Continued)**SDCE Team Activity Worksheet
Checklist of Items to Prepare (Continued)****F Review Proposals**

- Preliminary Evaluation Results
 - strengths and weaknesses
 - risks
- Preliminary Validation Results
- Initial CRs and DRs
- List of Data to be Gathered During Site Visit

G Plan for and Conduct Site Visit

- Final Site Visit Plan and Schedule
 - number and duration of site visits
 - location of site visits
- Preliminary Site Visit Agenda
- Site Visit Notification Package
 - site visit notification letter
 - list of follow-up questions and discussion items (including any CRs and DRs)
- Final Site Visit Agenda
- Introductory Briefing
- Site Visit Team Feedback Briefing
- Additional CRs and DRs
- Note Sheets and Data from Site Visit Discussions

H Analyze Clarification Requests (CRs) and Deficiency Reports (DRs)

- Additional CRs and DRs

I Evaluate, Score, and Integrate Results into Source Selection

- Results of Initial Data Analysis
- Additional CRs and DRs
- Filled-in Forms and Worksheets
 - capability evaluation matrix
 - CCA scoring sheets
 - FA scoring sheets
 - SDCE scoring sheet
- Total Integrated Assessment, Share with other Team Members
- Detailed Inputs into the Source Selection Evaluation Report
 - cost ratings
 - risk ratings
 - narratives of strengths and weaknesses
 - narratives of risks
- Inputs to SSEB/SSA Briefings as Required

J Incorporate into Contract

- Updated Contractual Documents
 - SDP
 - SEMP and SEMS

K Conclude SDCE Team Activities

- Metrics Data
- Lessons Learned Report

L Conduct Formal Feedback

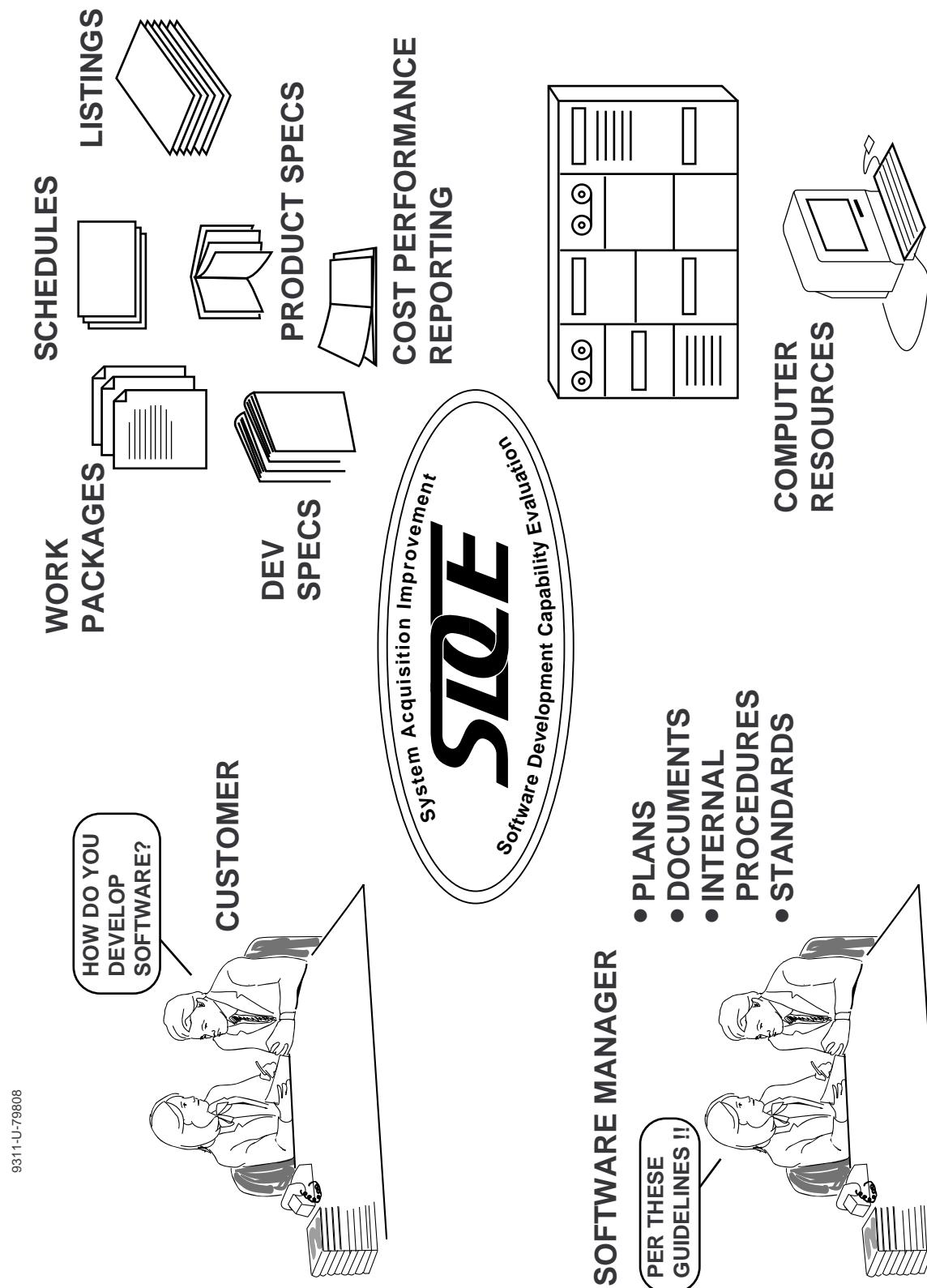
- SDCE Portion of Feedback Briefing for Successful Offeror
- SDCE Portion of Feedback Briefings for Unsuccessful Offerors

M Support Program Follow-Through

- Specific Inputs to Risk Reduction Plan
- Specific Inputs to Improvement Plan

ATTACHMENT 4. SDCE LIBRARY OF BRIEFING CHARTS

This attachment contains briefing charts on the general topic of SDCE, its background, and application. These charts are referenced from several places in the text of the pamphlet where outlines are introduced (see tables 4-2, 4-3, 4-11, and 4-12).



Outline

- OVERVIEW
- BACKGROUND
- APPROACH
- MODEL
- APPLICATION PROCESS
- FEATURES
- POLICY
- SUMMARY

Software Development Capability Evaluation (SDCE) Overview

- THE SDCE IS A METHOD TO EVALUATE THE CAPABILITY OF OFFERORS TO DEVELOP SOFTWARE TO SUCCESSFULLY MEET THE PROGRAM LIFE-CYCLE REQUIREMENTS
- THE SDCE ADDRESSES SOFTWARE ENGINEERING AND DIRECTLY RELATED SYSTEMS ENGINEERING AND DEVELOPMENT DISCIPLINES THAT ARE CRITICAL ELEMENTS TO SUCCESSFUL SYSTEMS/SOFTWARE DEVELOPMENT AND FOCUSES ON ENHANCING THE SOURCE SELECTION PROCESS

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Background

- SOFTWARE MANAGEMENT REMAINS A PROBLEM FOR THE AIR FORCE
 - SOURCE SELECTION BOARDS HAVE LITTLE INSIGHT INTO SYSTEMS/SOFTWARE ENGINEERING DEVELOPMENT CAPABILITIES OF POTENTIAL CONTRACTORS
 - CONTRACTORS OFTEN DO NOT IMPLEMENT THE PROCESS THEY PROPOSE AND PLAN TO FOLLOW ON THE PROGRAM
- TWO PRIMARY APPROACHES ARE USED TODAY BY AIR FORCE
 - SOFTWARE CAPABILITY EVALUATION (SCE) METHOD
 - SOFTWARE DEVELOPMENT CAPABILITY/CAPACITY REVIEW (SDCCR) METHOD
- NO CONSISTENT USE OF A SOFTWARE EVALUATION METHOD WITHIN AFMC
- CONCERN HAS BEEN EXPRESSED ABOUT CERTAIN ASPECTS OF THE EVALUATION METHODS AND WITH THE NEED TO PREPARE RESPONSES FOR MULTIPLE APPROACHES
- AFSC SPONSORED SOFTWARE PAT IDENTIFIED SYSTEMS ENGINEERING CAPABILITY AS A CRITICAL COMPONENT OF SOFTWARE DEVELOPMENT CAPABILITY AND RECOMMENDED METHODOLOGY BE EXPANDED. AFMC SE/CM PAT ENDORSED THIS POSITION
- SMC/CC INDEPENDENT REQUEST FOR AFMC/EN DECISION ON SINGLE METHOD

SDCE Focus

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- ACCURATELY IDENTIFY AND SUPPORT REDUCTION OF DEVELOPMENT RISK
- PROVIDE INSIGHT INTO CONTRACTOR DEVELOPMENT CAPABILITY AND PROCESSES
- HELP SELECT BIDDER WITH HIGHEST PROBABILITY OF SUCCESS
- ASSURE SYSTEM/SOFTWARE ENGINEERING PROCESS IS FOLLOWED ON PROGRAM (e.g. SEMP/SEMS/SDP)
- PUBLIC METHODOLOGY AND EVALUATION

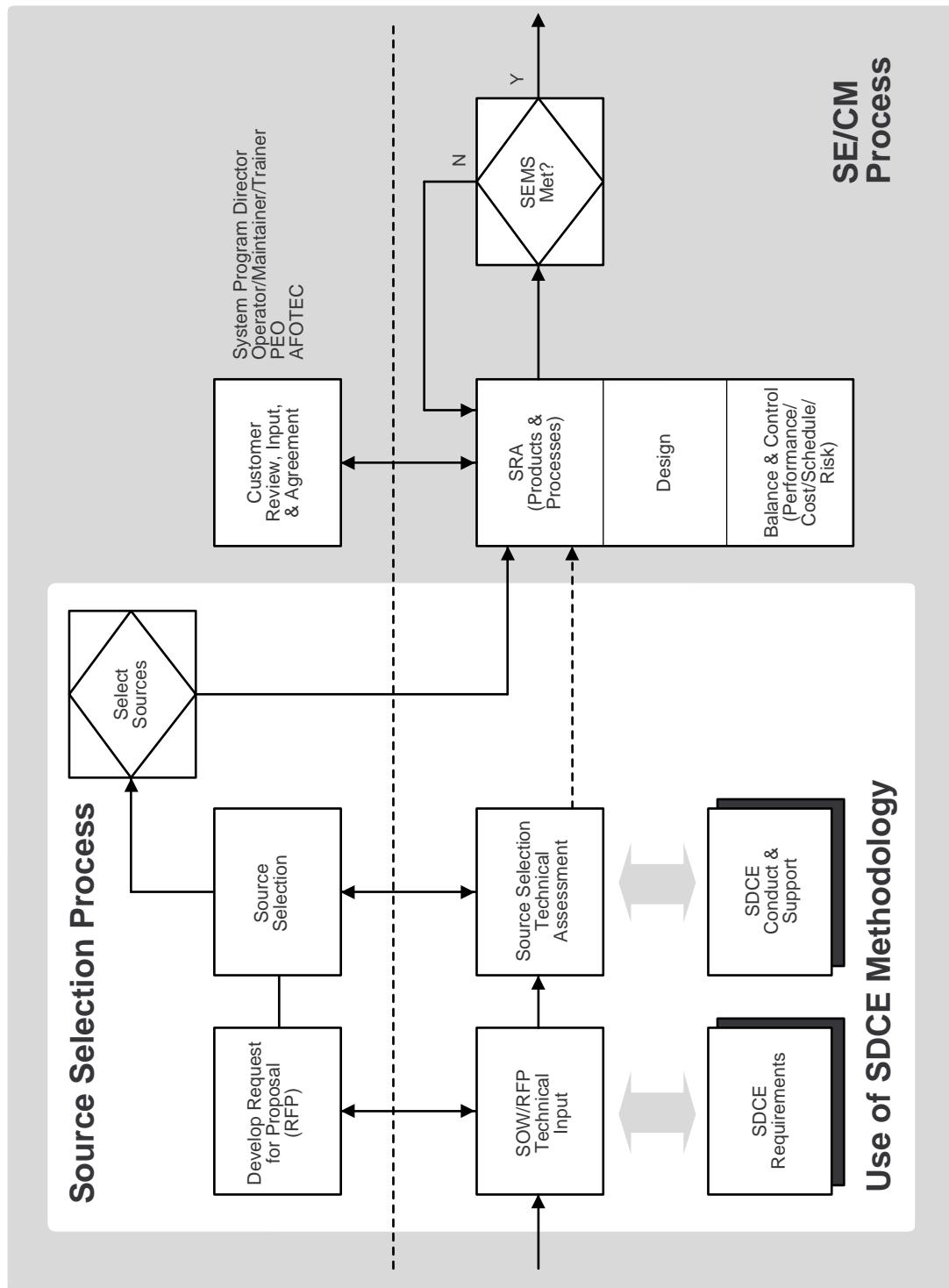
SDCE Approach

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- SINGLE PURPOSE -- ENHANCE THE SOURCE SELECTION PROCESS
 - TOTALLY INTEGRATED WITHIN THE SOURCE SELECTION STRUCTURE
 - SDCE TEAM MEMBERS ARE MEMBERS OF SSEB
 - FOCUSES ON HIGH VALUE DISCRIMINATORS SPECIFIC TO THE PROGRAM OR PROJECT IN SOURCE SELECTION
 - TAILORABLE -- SELECTED EXTENSIONS/SUBSET APPLIED TO EFFORT AT HAND
 - IDENTIFIES STRENGTHS, WEAKNESSES, AND RISKS FOR INCLUSION INTO SOURCE SELECTION AREA, FACTOR, AND SUBFACTOR EVALUATIONS
 - SDCE RESULTS MUST BE INTEGRATED WITH OTHER RELATED PROPOSAL EVALUATIONS FOR CONSISTENCY
 - SDCE RESULTS USED TO SUPPORT OFFEROR'S COMMITMENT TO PROCESS IN THE SDP, SEMP, AND SEMS
 - FOCUSES ON CAPABILITIES REQUIRED TO SUCCESSFULLY EXECUTE SPECIFIC PROGRAM/PROJECT
 - NOT INTENDED TO PROVIDE A COMPLETE VIEW INTO TOTAL ORGANIZATIONAL CAPABILITY TO DEVELOP SOFTWARE (DIFFERENT FROM SPA FOCUS)
 - SDCE RESULTS ARE NOT RELEASEABLE (SOURCE SELECTION SENSITIVE DATA)
 - CAN BE SHARED WITH EVALUATED OFFEROR (AFTER-AWARD FEEDBACK)
 - CANNOT BE SHOWN TO OTHER OFFERORS

SDCE Role In SE/CM Process

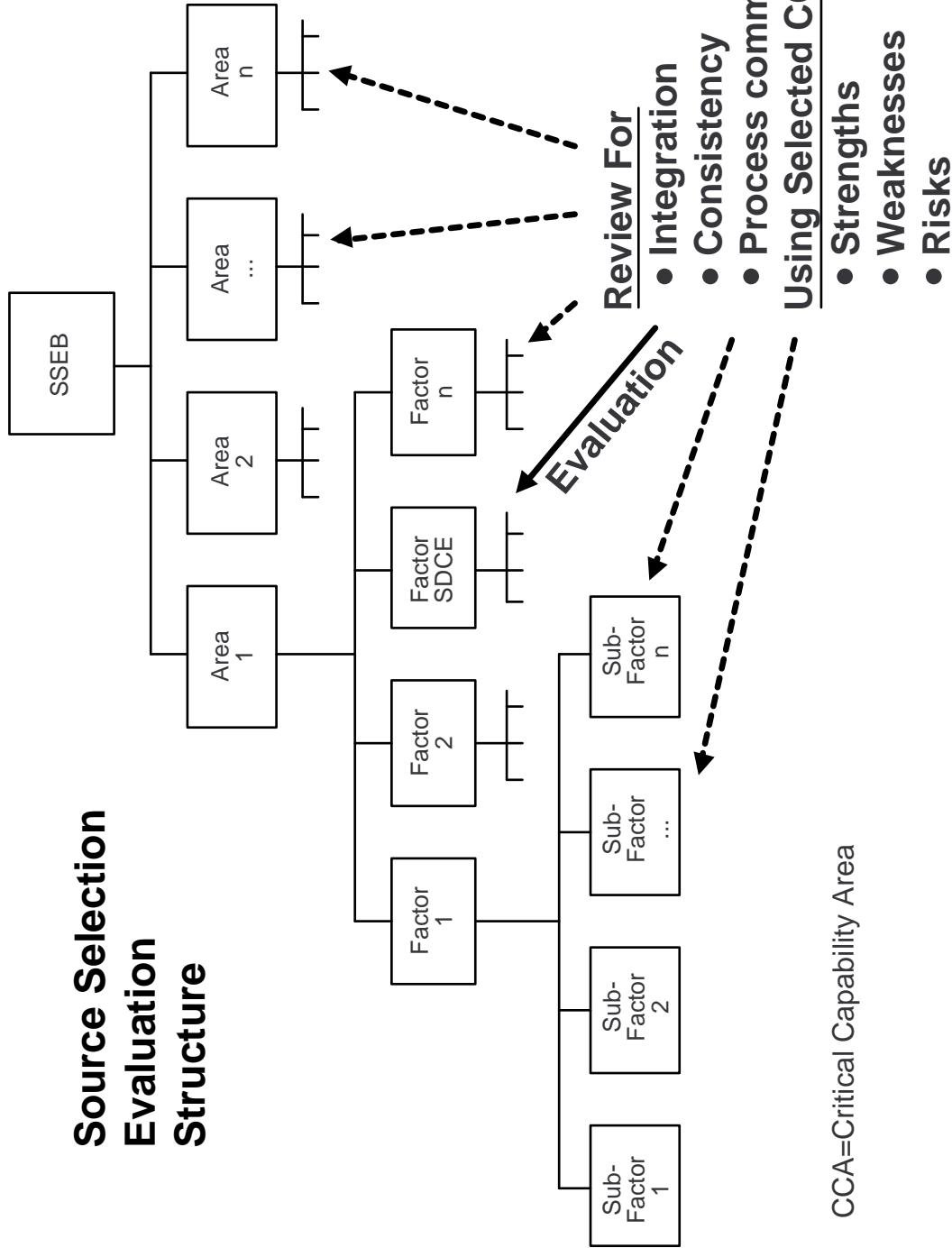
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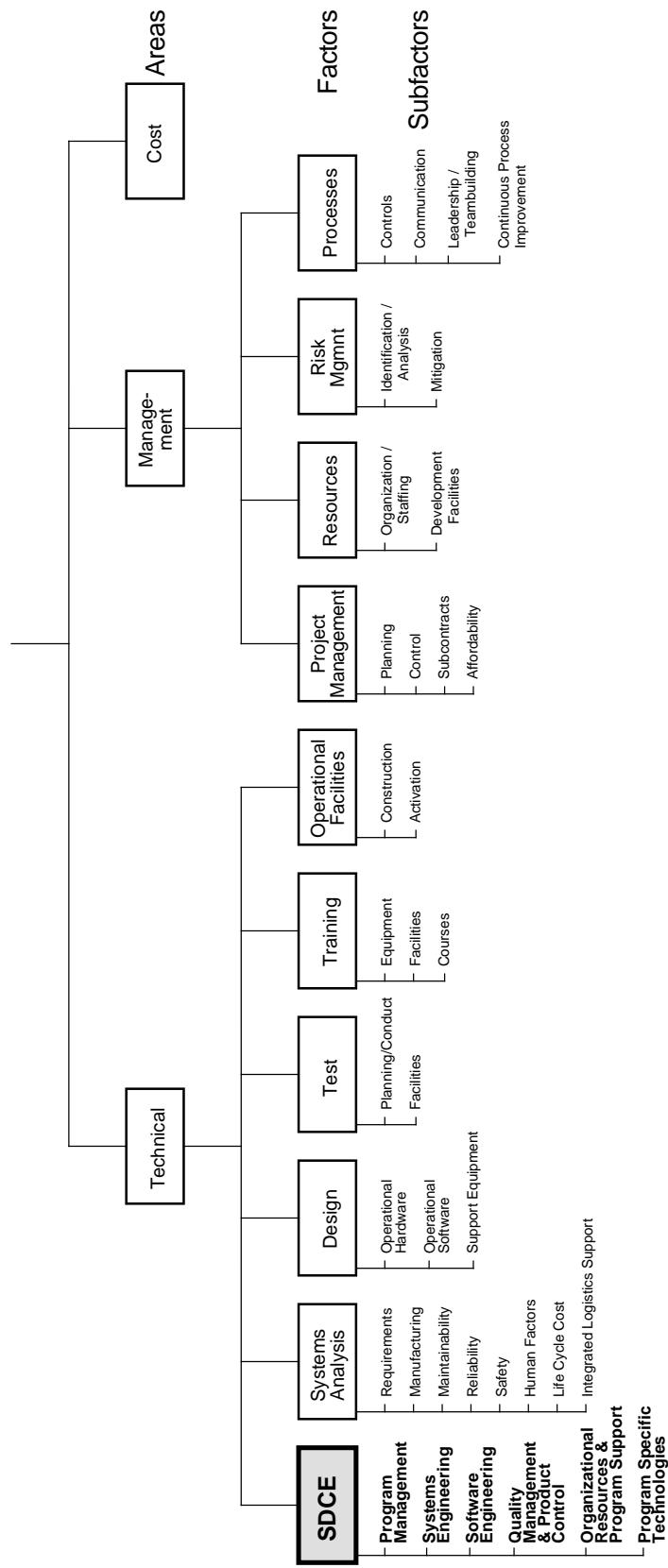
SDCE Role In Source Selection

Source Selection Evaluation Structure



Placement of the SDCE within the Source Selection Structure

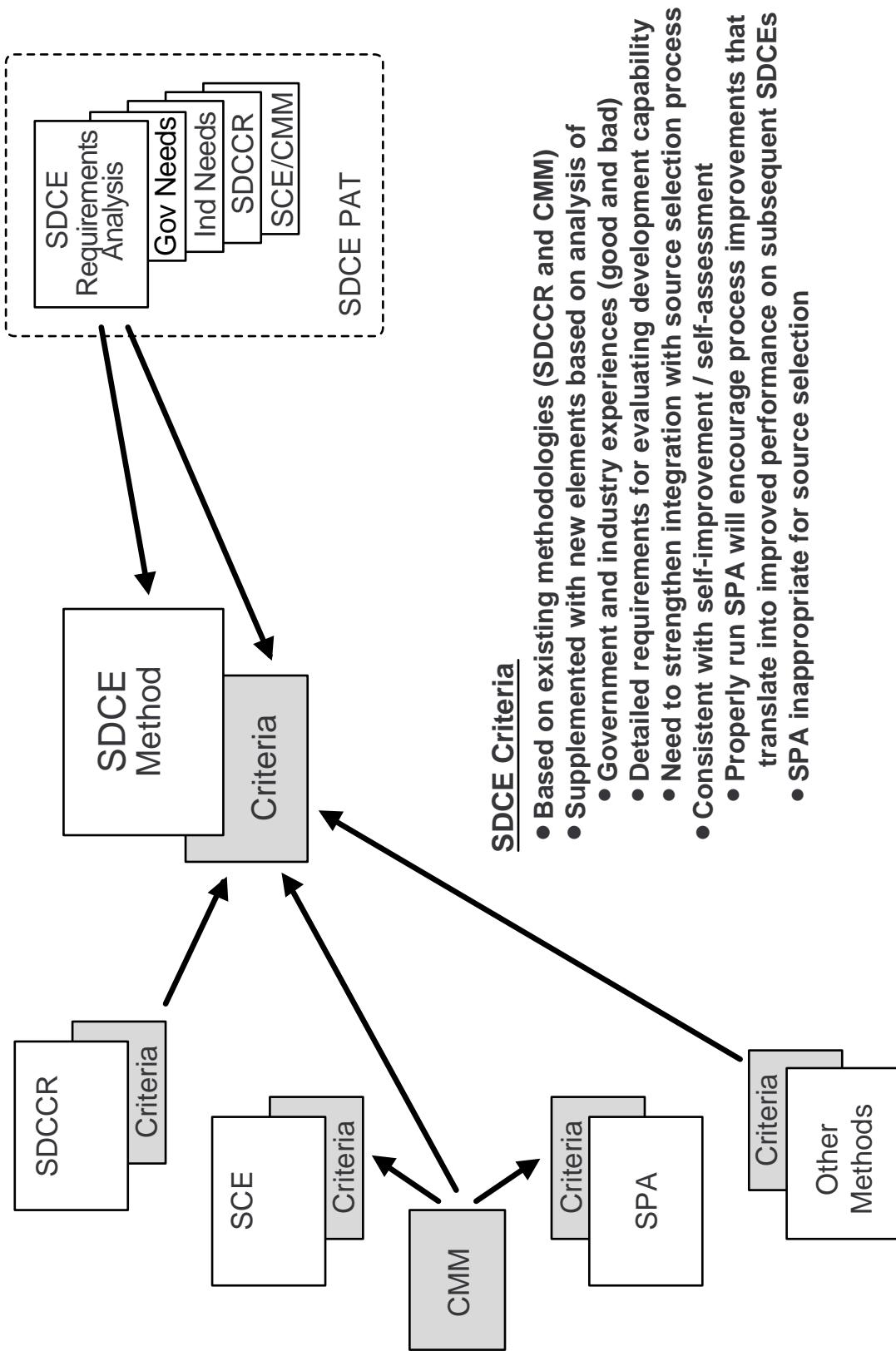
Large Project with 30 Subfactors



Findings From Data Gathering

- NO CONSISTENT USE OF AN EVALUATION METHODOLOGY ACROSS AFMC
 - SCE USED BY ESC
 - SDCCR USED BY ASC
 - NO CONSISTENT METHOD USED BY SMC
 - SELF-ASSESSMENTS (SPAs) USED BY ALCs
- BOTH SCE AND SDCCR METHODOLOGIES HAVE SHORTFALLS
 - SCE
 - SOFTWARE DEVELOPMENT CAPACITY NOT ADDRESSED
 - FOCUSED ON ORGANIZATION, NOT SPECIFIC PROGRAM/PROJECT
 - SYSTEMS ENGINEERING INTERFACE NOT ADDRESSED
 - NOT EASILY INTEGRATED WITH SOURCE SELECTION PROCESS
 - SDCCR
 - REQUIRES SIGNIFICANT INITIAL EFFORT
 - LACKS FORMAL INFRASTRUCTURE AND SUPPORT
 - DOCUMENTATION, TRAINING, & TAILORING GUIDANCE
 - NO FOCUS ON PROCESS IMPROVEMENT
- EXISTENCE OF TWO METHODOLOGIES CAUSES PROBLEMS FOR INDUSTRY
- HOWEVER, AVAILABILITY OF BOTH METHODOLOGIES PROVIDES FOUNDATION TO BUILD AN IMPROVED METHOD

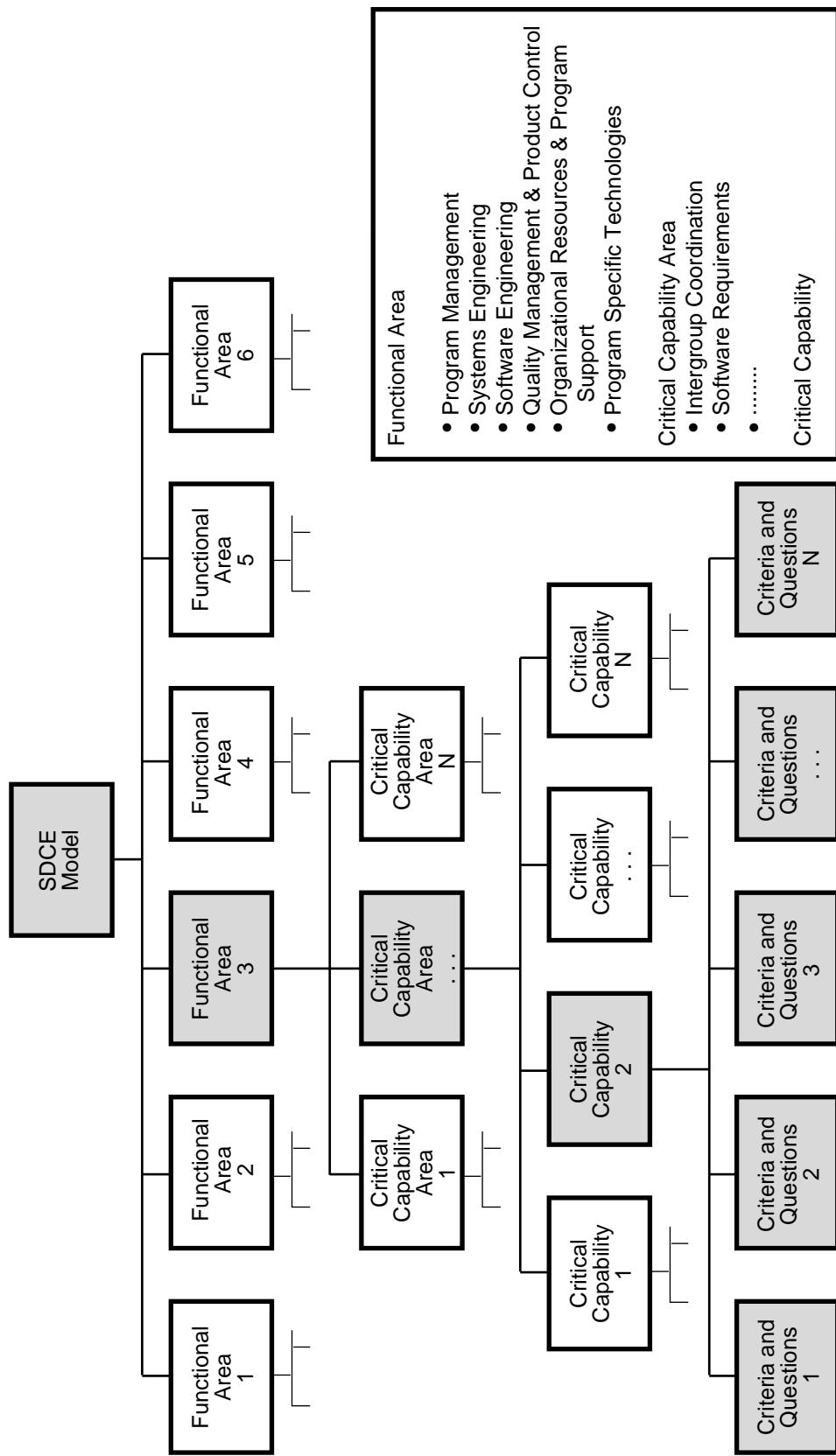
SDCE Development



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SDCE Model Structure

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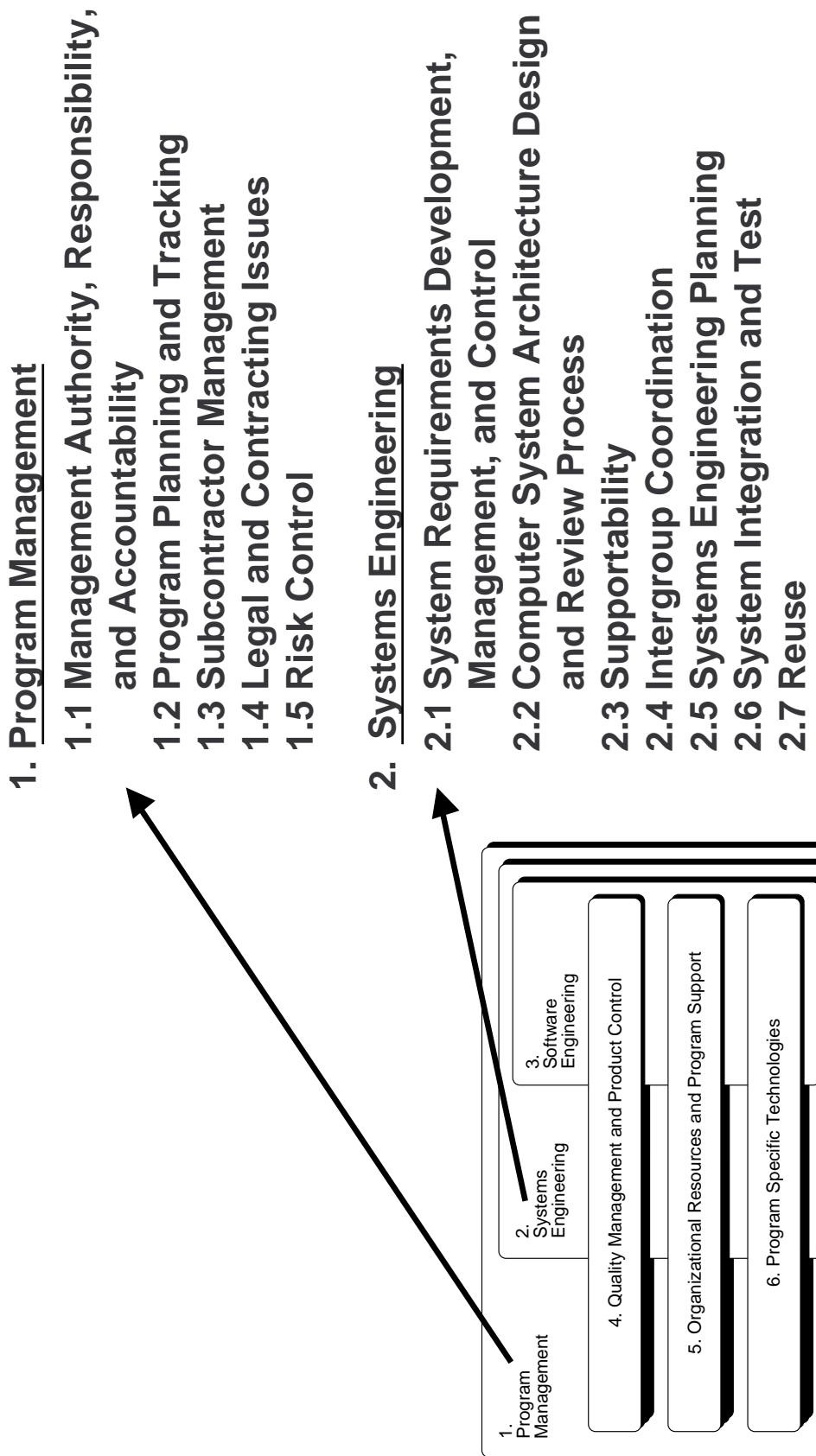
SDCE Functional Areas

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-
- ```
graph TD; A[1. Program Management] --- B[2. Systems Engineering]; B --- C[3. Software Engineering]; C --- D[4. Quality Management and Product Control]; D --- E[5. Organizational Resources and Program Support]; E --- F[6. Program Specific Technologies]
```
1. Program Management
  2. Systems Engineering
  3. Software Engineering
  4. Quality Management and Product Control
  5. Organizational Resources and Program Support
  6. Program Specific Technologies

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## Critical Capability Areas



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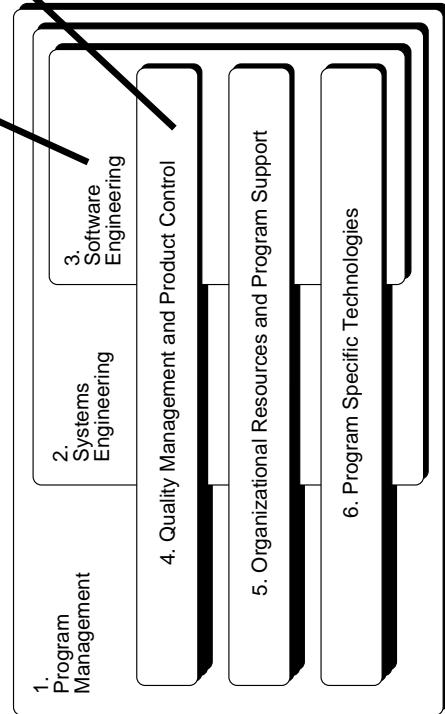
## Critical Capability Areas (Continued)

### 3. Software Engineering

- 3.1 Software Development Planning
- 3.2 Software Project Tracking and Reporting
- 3.3 Software Requirements Management
- 3.4 Software Design
- 3.5 Software Coding and Unit Testing
- 3.6 Software Integration and Test

### 4. Quality Management and Product Control

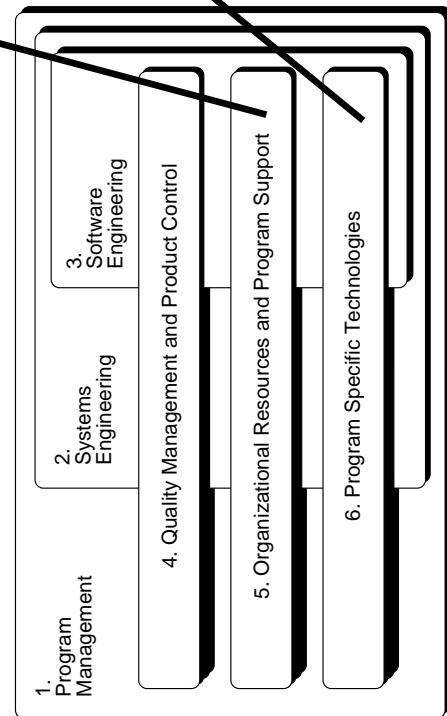
- 4.1 Software Quality Management
- 4.2 Software Quality Assurance
- 4.3 Defect Control
- 4.4 Metrics
- 4.5 Peer Reviews
- 4.6 Internal Independent Verification and Validation
- 4.7 Software Configuration Management
- 4.8 Documentation



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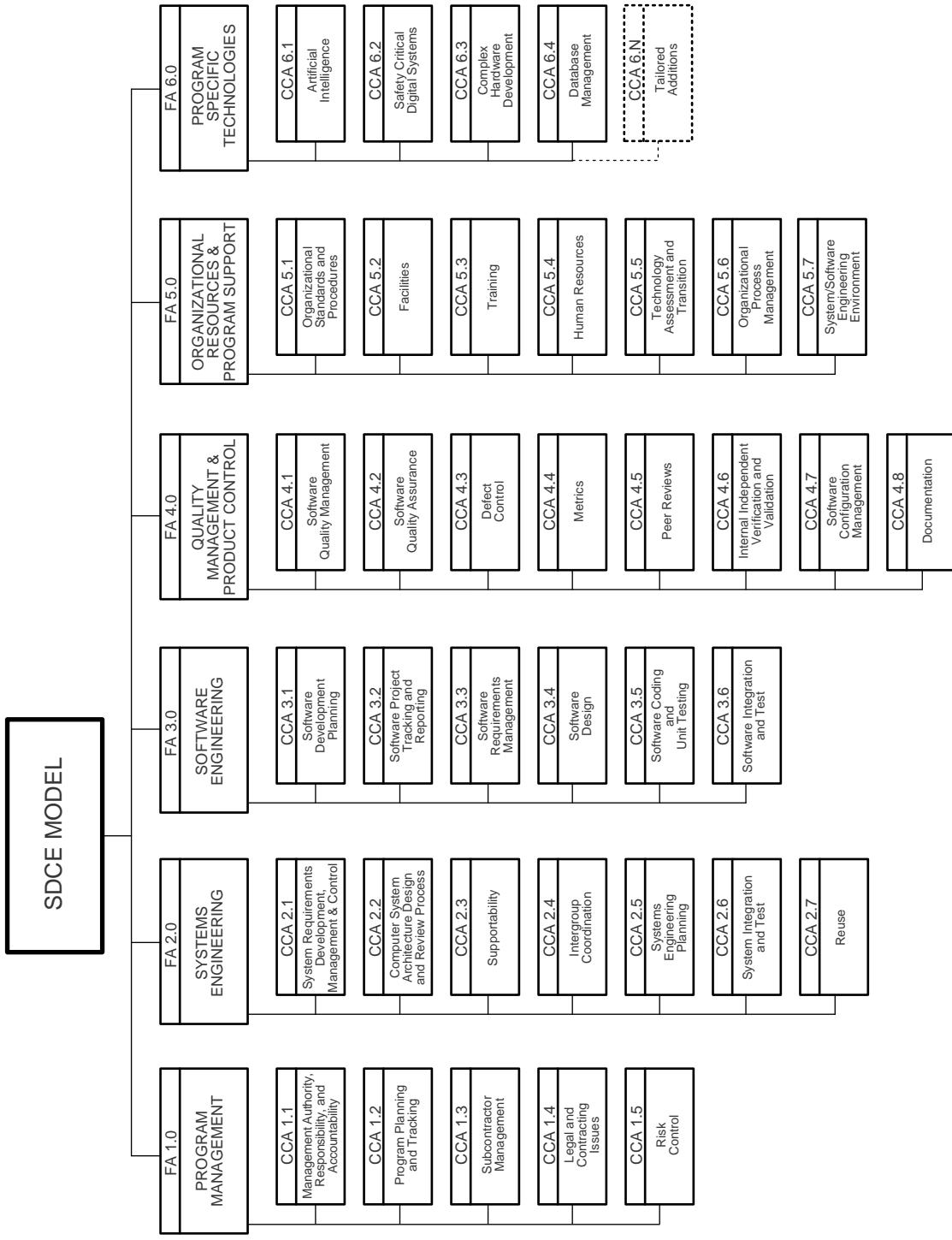
## Critical Capability Areas (Continued)

- 5. Organizational Resources & Program Support**
  - 5.1 Organizational Standards and Procedures**
  - 5.2 Facilities**
  - 5.3 Training**
  - 5.4 Human Resources**
  - 5.5 Technology Assessment and Transition**
  - 5.6 Organizational Process Management**
  - 5.7 System/Software Engineering Environment**
  
- 6. Program Specific Technologies**
  - 6.1 Artificial Intelligence**
  - 6.2 Safety Critical Digital Systems**
  - 6.3 Complex Hardware Development**
  - 6.4 Database Management**



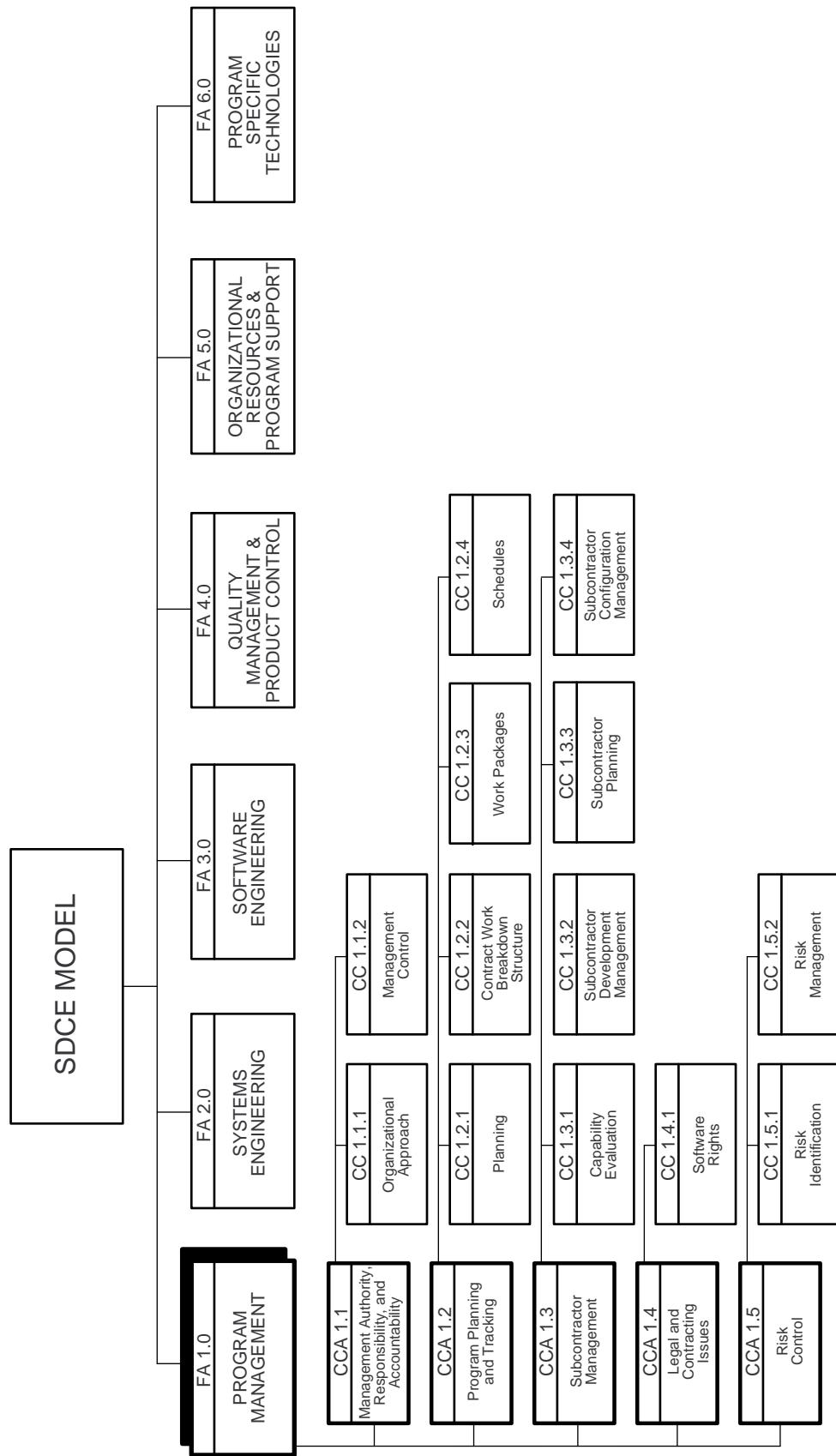
# SDCE Model Block Chart

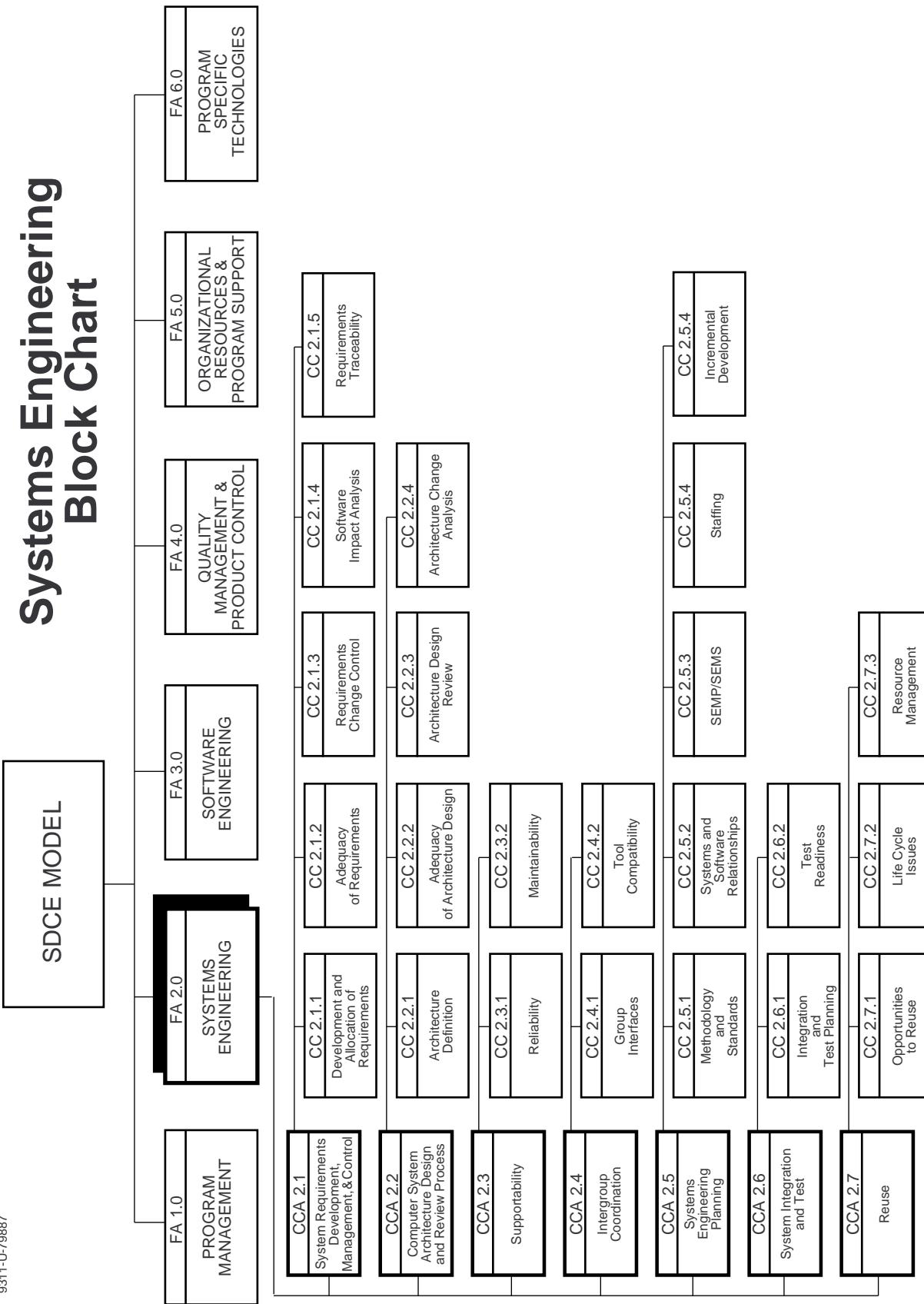
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# Program Management Block Chart

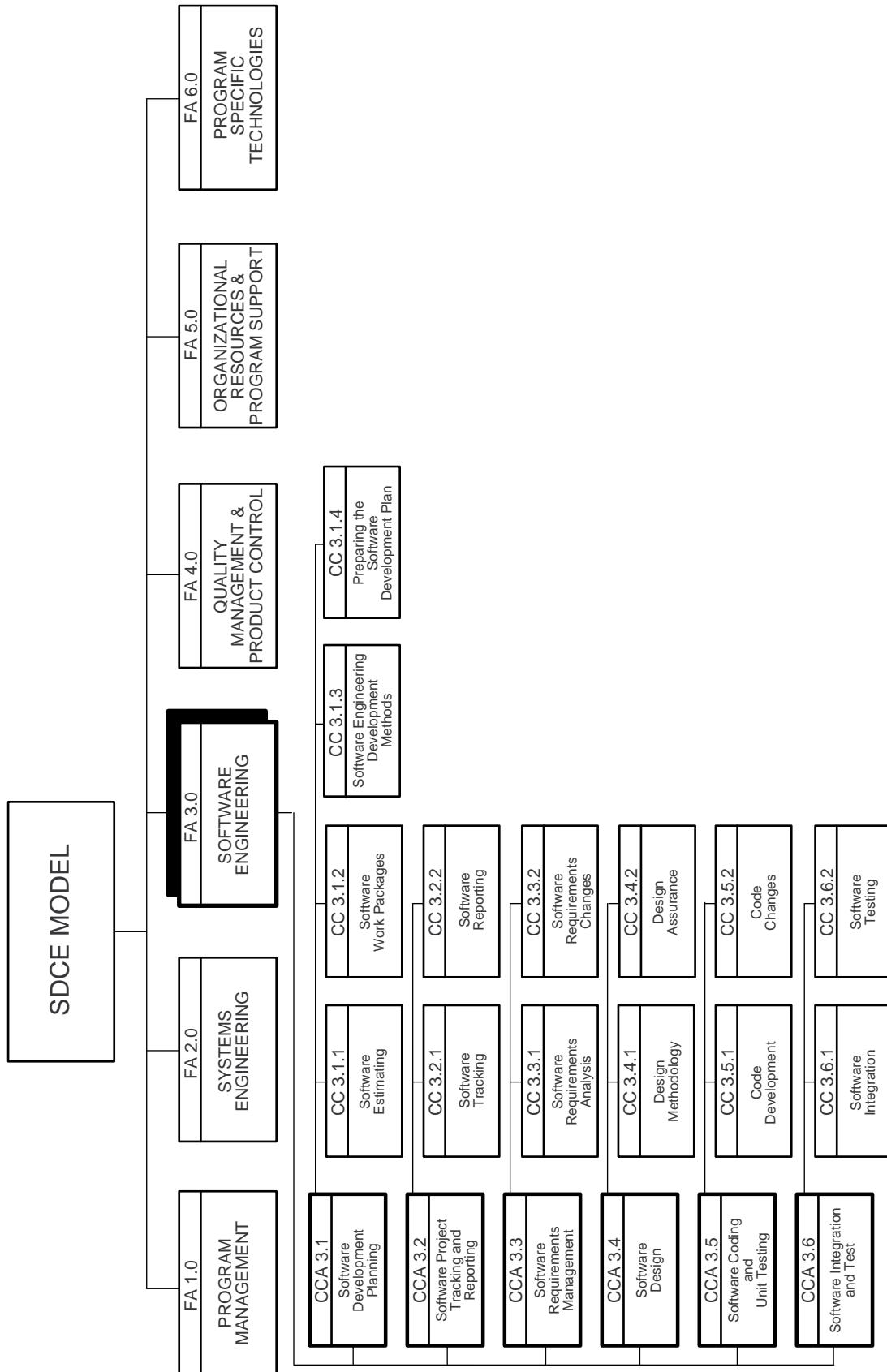
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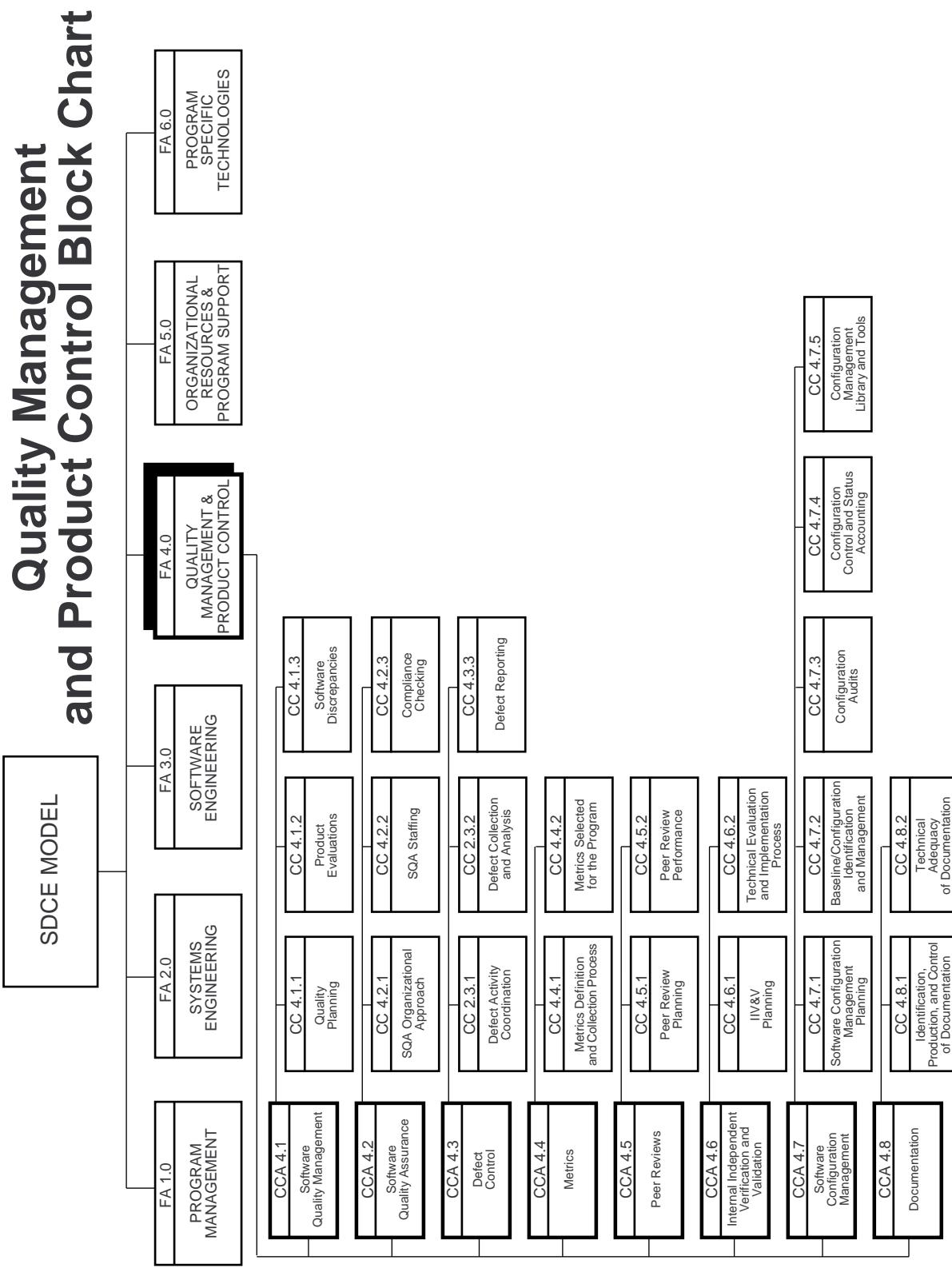


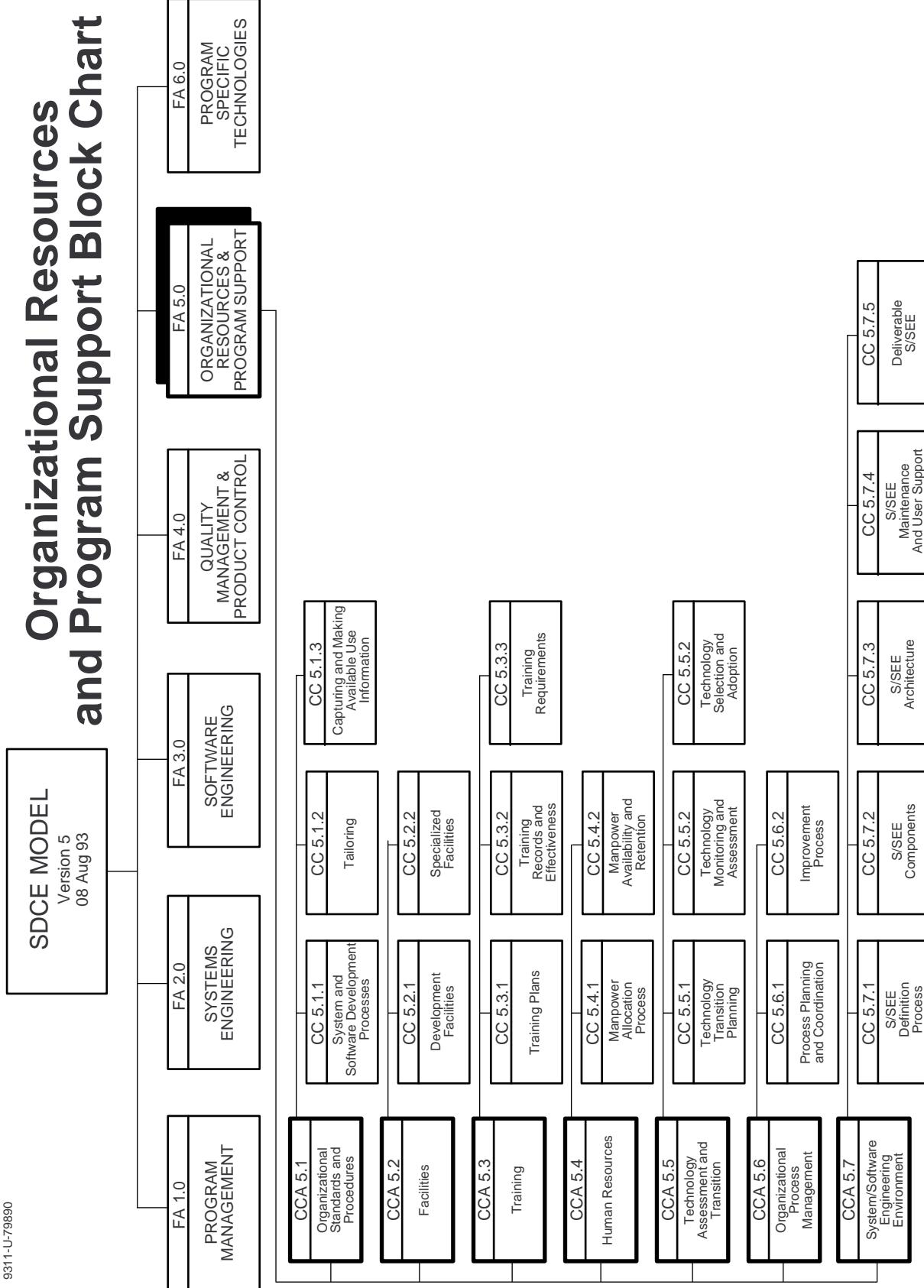


# Software Engineering Block Chart

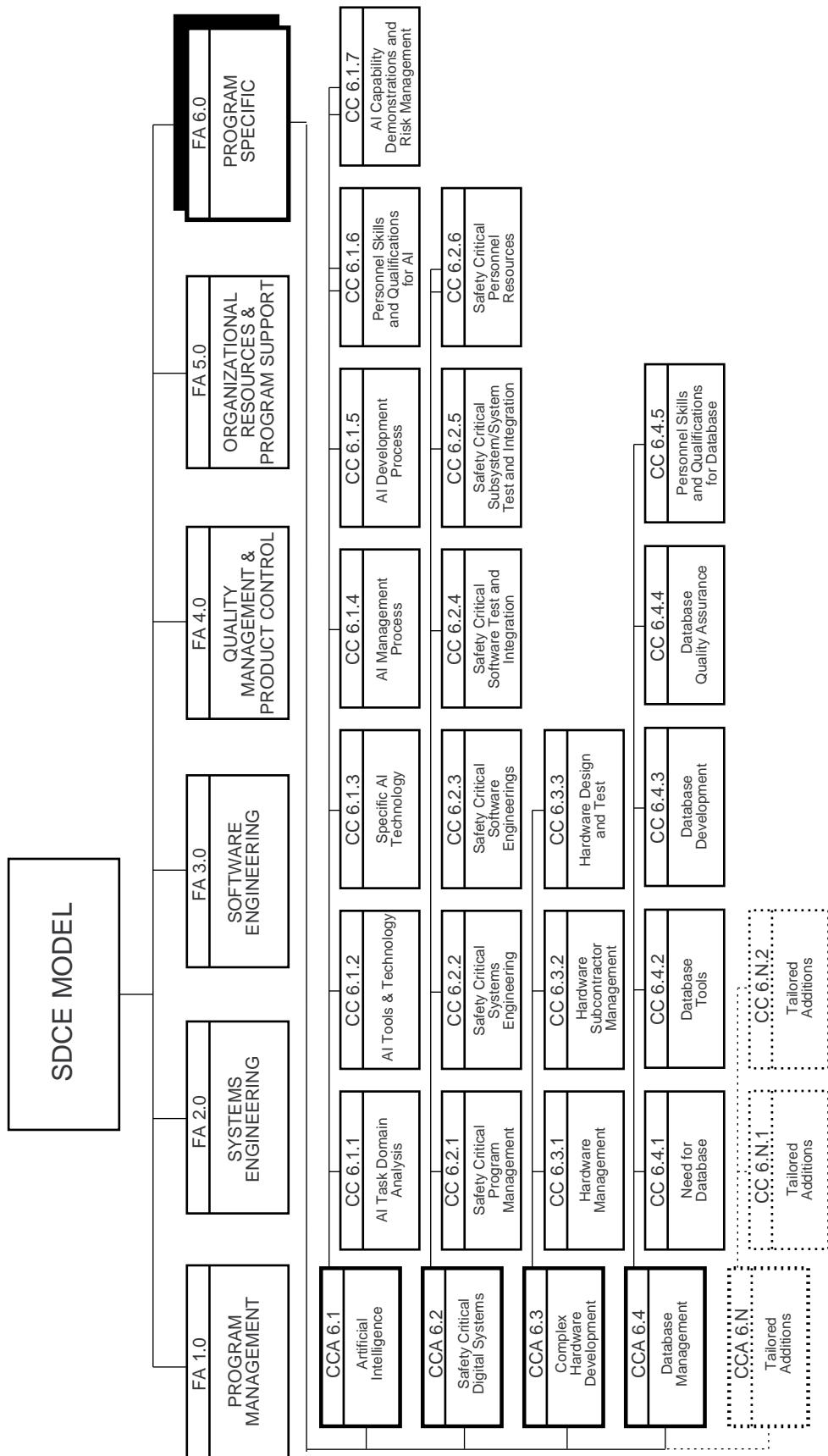
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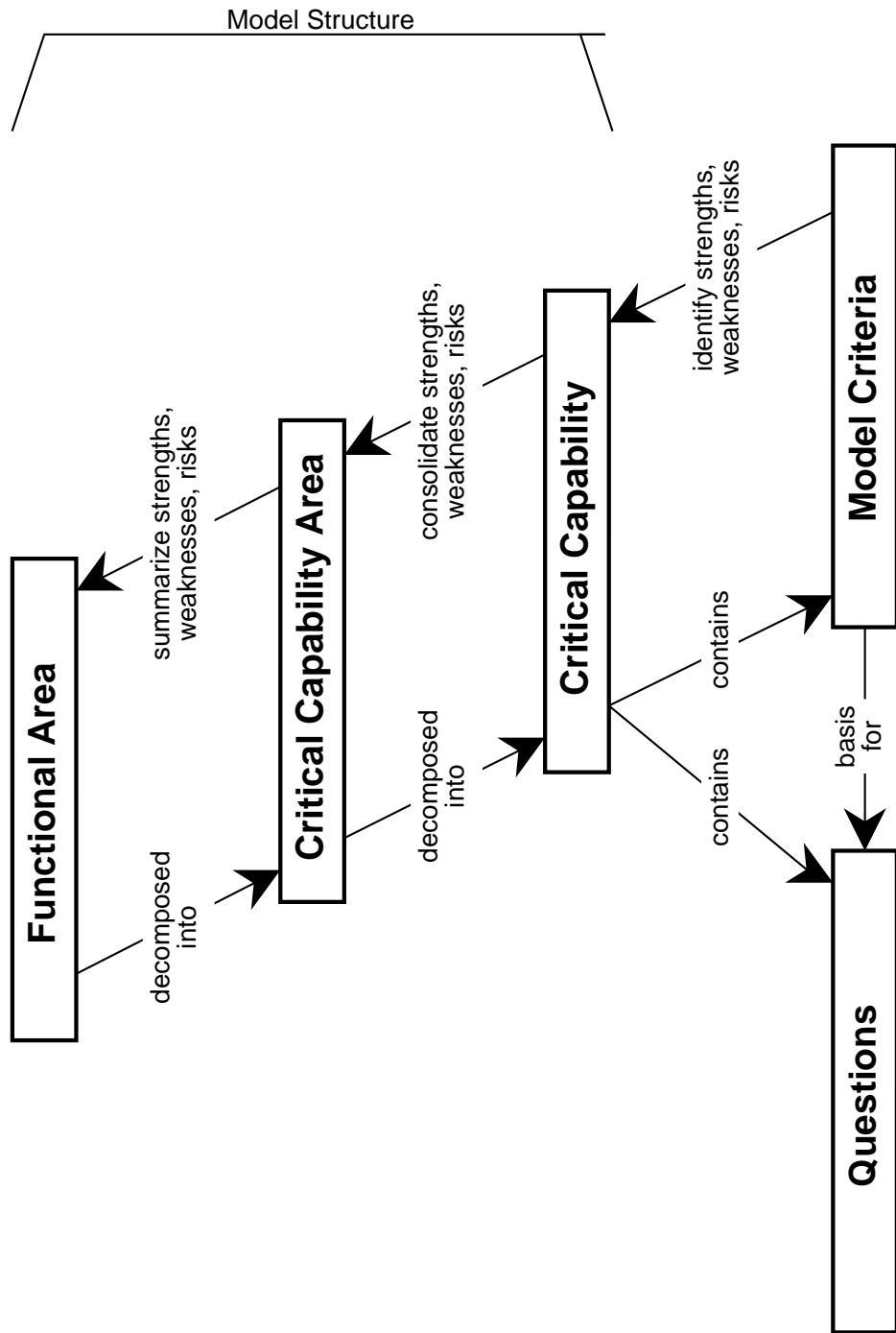


# Program Specific Technologies Block Chart



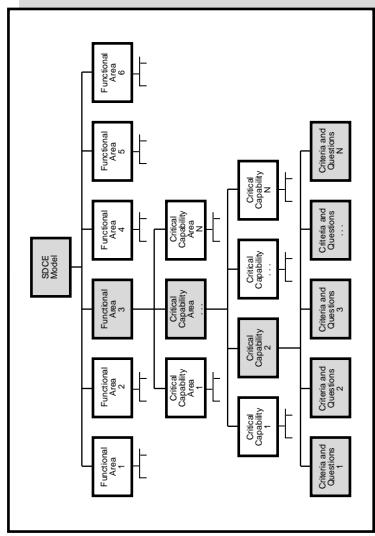
## The SDCE Model

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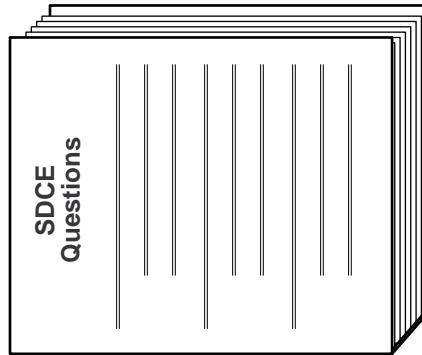
## SDCE Questions

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- Standardized approach to gathering data
- Offeror submits with proposal
- Linked to SDCE model criteria

- Structured to support "no discussions"



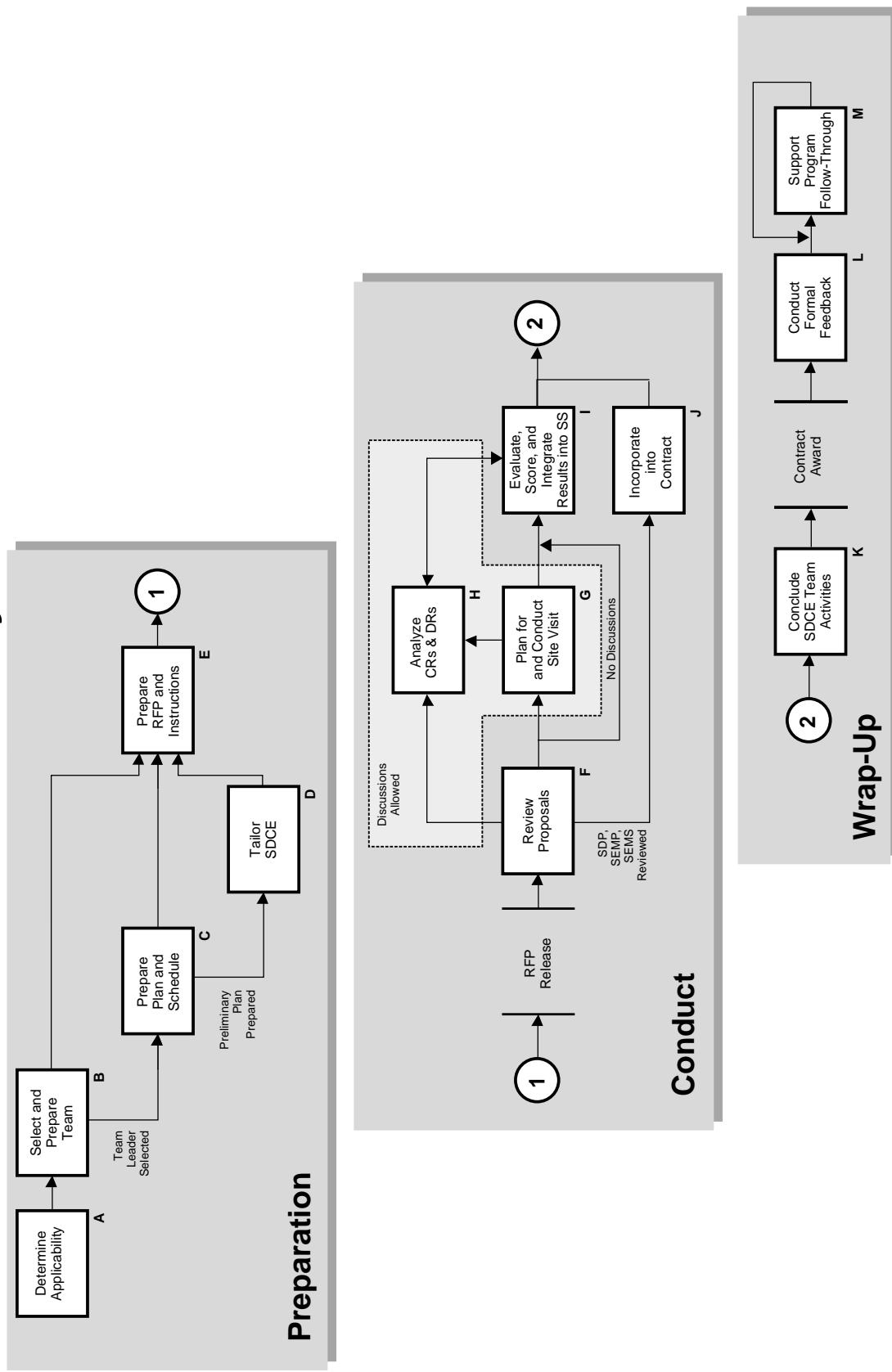
## Example Format for Criteria and Questions

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|                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>3 Software Engineering</b>                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                  |
| <b>3.6 Software Integration and Test</b>                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                  |
| <b>3.6.1 Software Integration</b>                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                  |
| <b>C1</b> The software integration planning takes into account the interdependencies between the different software components and the criticality of each component. <b>Q1 Q2 Q3</b>                     | <p><b>Q1</b> Describe your process for planning the software integration. How many different components do you integrate at once? How do you determine the order for integrating the different software components? Describe how your integration process accommodates all levels of software integration. <b>C1, C2, C4</b></p> |
| <b>C2</b> The software integration planning takes into account the availability of other components of the system. <b>Q1 Q4</b>                                                                           | <p><b>Q2</b> How are the dependencies between the different software components determined? At what level? How does it affect integration planning? <b>C1</b></p>                                                                                                                                                                |
| <b>C3</b> For planned incremental software development, the software integration is planned, scheduled, and resources are allocated to support each increment of software development. <b>Q5</b>          | <p><b>Q3</b> How is the criticality of each component determined? What role does it play in integration planning? <b>C1</b></p>                                                                                                                                                                                                  |
| <b>C4</b> The software integration planning and process accommodate software integration starting with the lowest level elements, i.e., units through all levels, including CSCl and CSCl/HWCl. <b>Q1</b> | <p><b>Q4</b> How does your integration planning handle situations where a needed software or hardware component is not available on time? <b>C1</b></p>                                                                                                                                                                          |
|                                                                                                                                                                                                           | <p><b>Q5</b> How does your integration planning cover integration with all planned software increments (blocks, builds)? <b>C3</b></p>                                                                                                                                                                                           |

9311-U-79826

## SDCE Activity Flow



## **SDCE ACTIVITIES PREPARATION (1 OF 2)**

9311-U-79837

### Determine Applicability

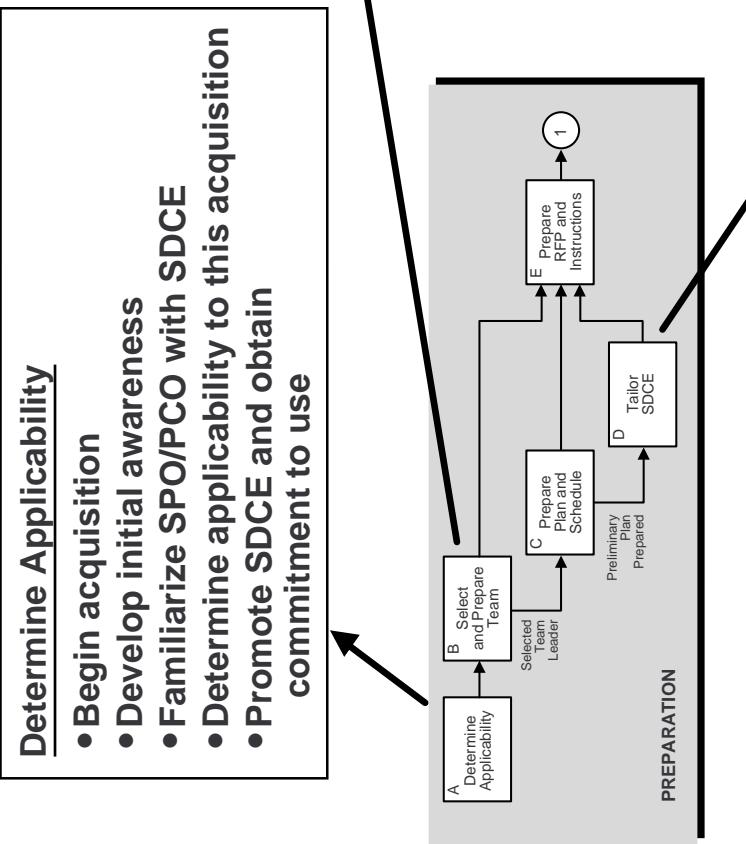
- Begin acquisition
- Develop initial awareness
- Familiarize SPO/PCO with SDCE
- Determine applicability to this acquisition
- Promote SDCE and obtain commitment to use

### Select and Prepare Team

- Select team leader
- Define team size and makeup
- Review evaluator qualification criteria
- Core team qualification criteria
  - Support team qualification criteria
- Select team
- Prepare team
- Select and prepare additional team members

### Tailor SDCE, Select Criteria and Questions

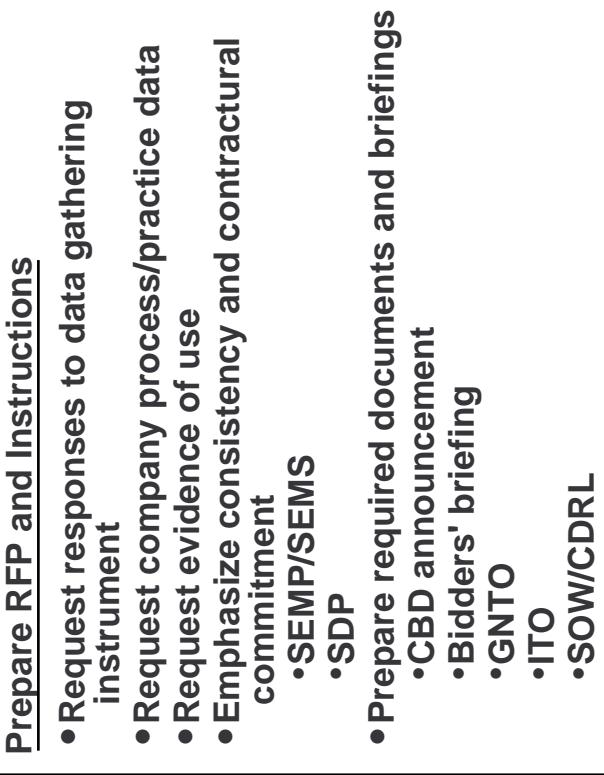
- Determine scope and size of SDCE
- Develop software profile for this acquisition
- Determine potential high value discriminators
- Select CCs and CCAs
- Determine additional SDCE team skills required



## SDCE ACTIVITIES PREPARATION (2 OF 2)

### Prepare Plan and Schedule

- Outline SDCE tasks and schedule
  - Site visit scenarios
- Prepare preliminary plan
  - Contractor organization/teaming alternatives
  - Update and integrate plan
  - Preparation of evaluation standards



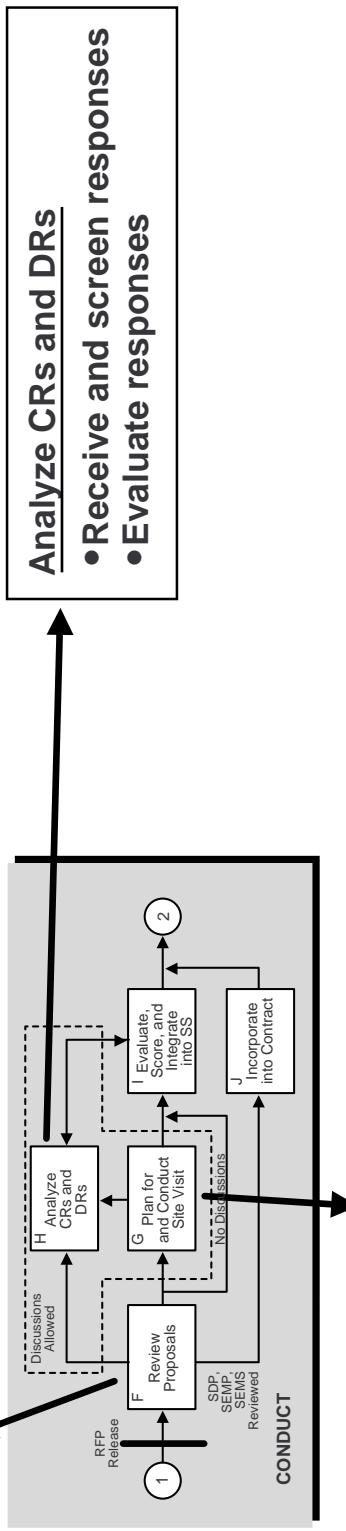
9911-U-79838

## **SDCE ACTIVITIES CONDUCT (1 OF 2)**

9311-U-79839

### Review Proposals

- Check proposal for requested SDCE data
- Perform initial evaluation of proposal data
- Perform initial validation of proposal data
- Perform initial assessment of strengths, weaknesses, and risks
- Prepare CRs and DRs
- Release CRs and DRs if discussions allowed
- Determine data to be gathered via SDCE site visit

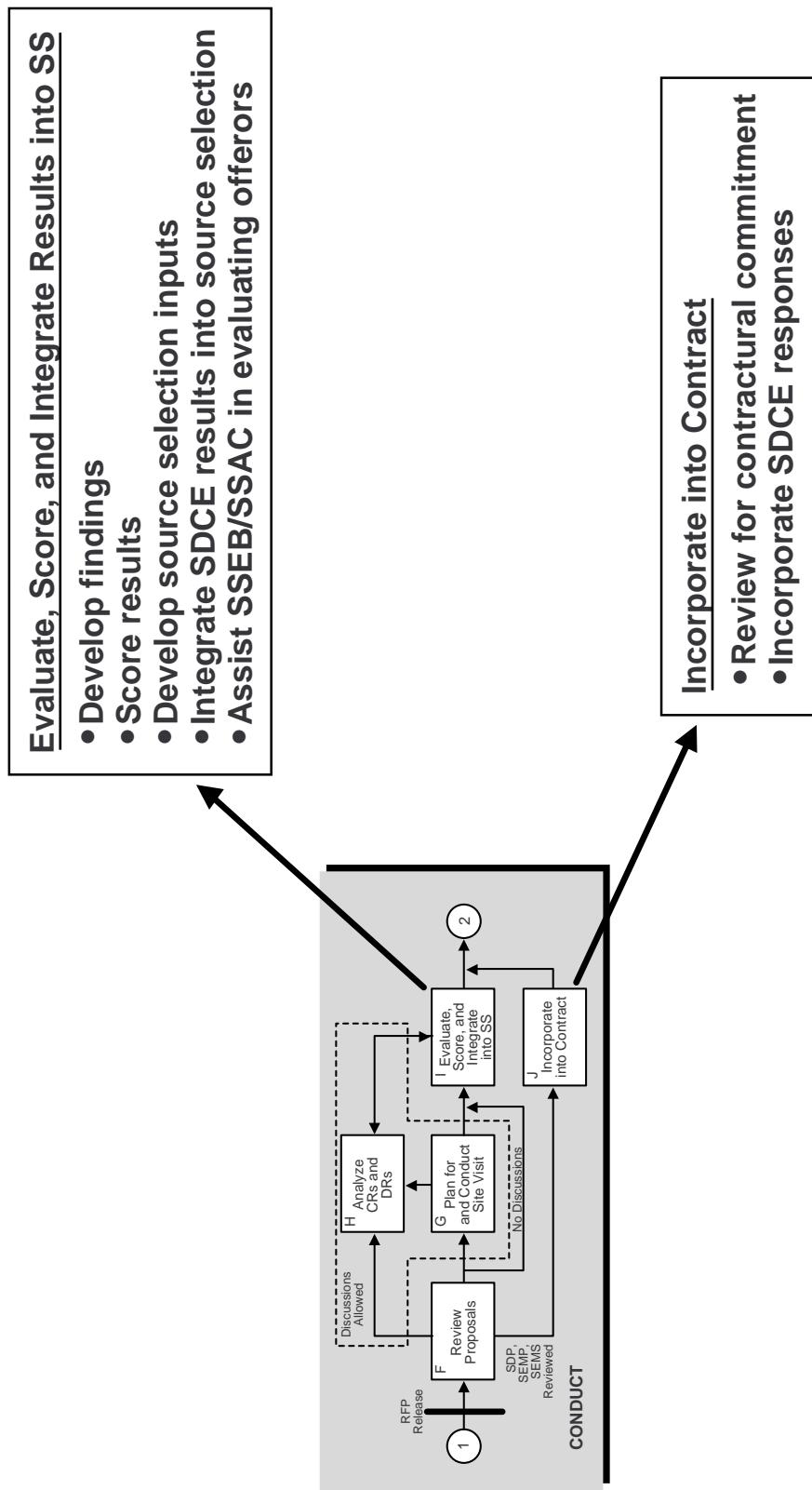


### Plan for and Conduct Site Visit

- Evaluation team plans SDCE site visit
- Offeror team responds to RFP data request
- Evaluation team finalizes SDCE site visit plans
- Offeror team prepares for SDCE site visit
- Evaluation team conducts SDCE site visit
- Offeror team participates in SDCE site visit

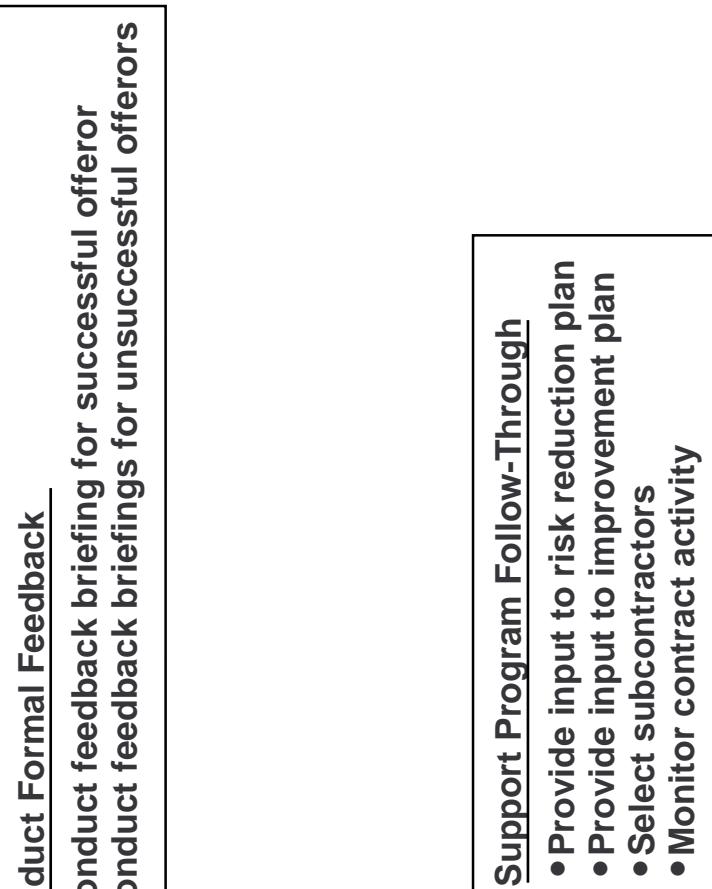
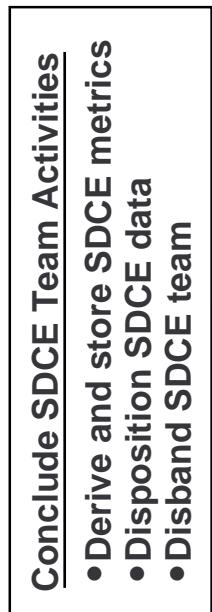
## SDCE ACTIVITIES CONDUCT (2 OF 2)

9311-U-79840



## SDCE ACTIVITIES WRAP-UP

9911-U-79841



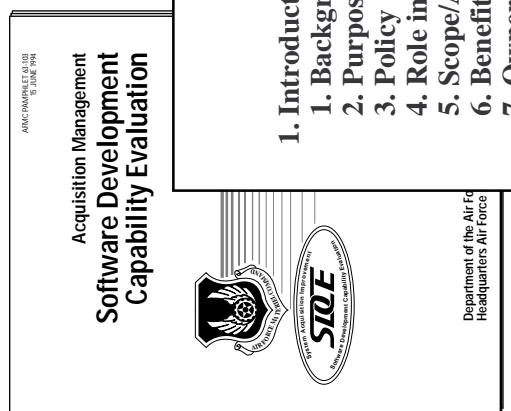
## Team Makeup

- TEAM STRUCTURE
  - CORE TEAM
    - SYSTEMS ENGINEERING
    - SOFTWARE ENGINEERING
    - PROGRAM/PROJECT MANAGEMENT
    - LOGISTICS
  - SUPPORT TEAM
    - FUNCTIONAL EXPERTS AS REQUIRED
- EXPERIENCE LEVEL
  - 15 YEARS FOR TEAM LEADER
  - 7 YEARS FOR CORE TEAM MEMBERS
- ALL ARE SSEB MEMBERS

9311-U-79833

# SDCE Guidebook (AFMCPAM Pamphlet)

9311-U-79798



## Contents

1. Introduction
  1. Background
  2. Purpose
  3. Policy
  4. Role in Source Selection
  5. Scope/Applicability
  6. Benefits/Limitations
  7. Ownership/Support
2. Overview of the SDCE Method
  1. SDCE Model Overview
  2. SDCE Process Overview
3. Description of the SDCE Model
  1. Program Management
  2. Systems Engineering
  3. Software Engineering
  4. Quality Management and Product Control
  5. Organizational Resources and Program Support
  6. Program Specific Technologies
4. Description of the SDCE Process
  - A. Determine Applicability
  - B. Select and Prepare Team
  - C. Prepare Plan and Schedule
  - D. Tailor SDCE, Select Criteria and Questions
  - E. Prepare RFP and Instructions
  - F. Review Proposals
  - G. Plan for and Conduct Site Visit
  - H. Analyze Clarification Requests (CRs) and Deficiency Reports (DRs)
  - I. Evaluate, Score, and Integrate Results into Source Selection
  - J. Incorporate into Contract
  - K. Conclude SDCE Team Activities
  - L. Conduct Formal Feedback
  - M. Support Program Follow-Through
5. Model Criteria and Questions
- Attachments
  - Acronyms, Definitions, and References
  - Templates and Examples
  - Data Collection and Analysis Forms
  - Library of Briefing Charts

# SDCE Products

9311-U-79800

1. MODEL
  - FUNCTIONAL AREAS
  - CRITICAL CAPABILITY AREAS
  - EVALUATION CRITERIA
  - GUIDELINES FOR USE
  - QUESTIONS
2. PROCESS GUIDELINES
  - WHEN TO APPLY
  - GUIDELINES FOR CONSISTENCY
3. [SDCE POLICY]  
(IMPLEMENTATION ISSUE)
4. TEAM QUALIFICATION GUIDELINES
  - TEAM COMPOSITION
  - STAKEHOLDER REPRESENTATION
    - INTERDISCIPLINARY REPRESENTATION
  - REFERENCE TO SOURCE SELECTION GUIDELINES
5. LIST OF ALTERNATIVE SITE/NO SITE VISIT SCENARIOS
6. SDCE STANDARD RFP BOILERPLATE
7. SUBCONTRACTOR PARTICIPATION  
GUIDELINES
8. PROJECT PROFILE CHECKLISTS
  - PROGRAM CHARACTERISTICS/PROFILE
  - LEVEL OF DETAIL SELECTION CRITERIA
9. FORMS
  - PROJECT SAMPLE DATA COVER SHEET
  - CAPABILITY DESCRIPTION MATRIX FORM
  - CAPABILITY IMPLEMENTATION MATRIX FORM
  - SITE VISIT DATA GATHERING FORM
10. TEMPLATES
  - SDCE INTRODUCTION BRIEFING
  - RFP INTRODUCTION
  - RFP INSTRUCTIONS TO OFFERORS
  - SDCE IMPLEMENTATION PLAN FOR APPLICATION OF SDCE (COMPANION TO SOURCE SELECTION PLAN)
  - SOURCE SELECTION EVALUATION PLAN (SDCE SECTION) (EVALUATION CRITERIA)
    - SITE VISIT AGENDA
    - SITE VISIT NOTIFICATION LETTER
    - SITE VISIT SCHEDULE
    - FEEDBACK BRIEFING
11. SDCE CAPABILITIES & LIMITATIONS SUMMARY
12. TAILORING GUIDELINES
13. GUIDELINES FOR VALIDATION OF PROCESSES
14. SDCE METRICS

# Sample SDCE Plan

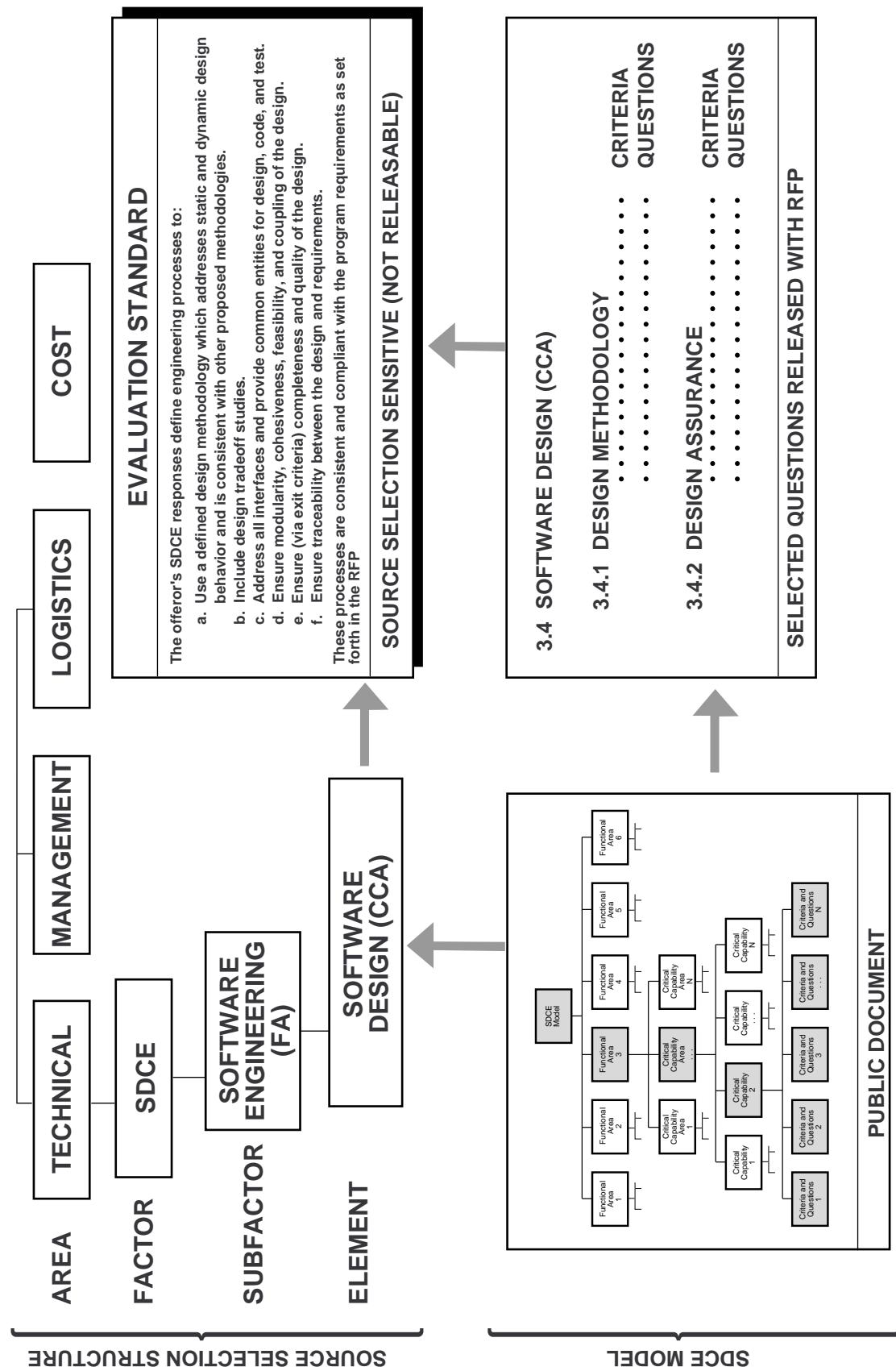
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|                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HYPOTHETICAL</b><br><br><b>ADVANCED COMBAT FIGHTER</b><br><br><b>SOFTWARE DEVELOPMENT CAPABILITY EVALUATION</b><br><br><b>IMPLEMENTATION PLAN</b><br><br><b>APPENDIX ____ TO THE</b><br><br><b>ADVANCED COMBAT FIGHTER SOURCE SELECTION PLAN</b><br><br><b>ASC/YAES</b><br><br><b>5 APRIL 1995</b> | <b>HYPOTHETICAL</b><br><br><b>CONTENTS</b><br><br>1. Introduction.....4<br>2. Applicable Documents .....4<br>3. Team Composition .....4<br>4. Assigned Responsibilities.....5<br>5. Schedule and Sequence of Events ..... |
|                                                                                                                                                                                                                                                                                                       | <b>ATTACHMENTS</b><br><br>[Not included in this example plan]<br><br>A. Reporting Forms .....A-1<br><br>B. SDCE Instructions to Offerors/Bidders .....B-1<br><br>C. SDCE Site Visit Planning .....C-1                     |

|                                                                                                                                                                                                                           |                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>HYPOTHETICAL</b><br><br><b>CONTENTS</b><br><br>1. Introduction.....4<br>2. Applicable Documents .....4<br>3. Team Composition .....4<br>4. Assigned Responsibilities.....5<br>5. Schedule and Sequence of Events ..... | <b>HYPOTHETICAL</b><br><br><b>5 April 1995</b>                                                                                                                                                        |
|                                                                                                                                                                                                                           | <b>ATTACHMENTS</b><br><br>[Not included in this example plan]<br><br>A. Reporting Forms .....A-1<br><br>B. SDCE Instructions to Offerors/Bidders .....B-1<br><br>C. SDCE Site Visit Planning .....C-1 |

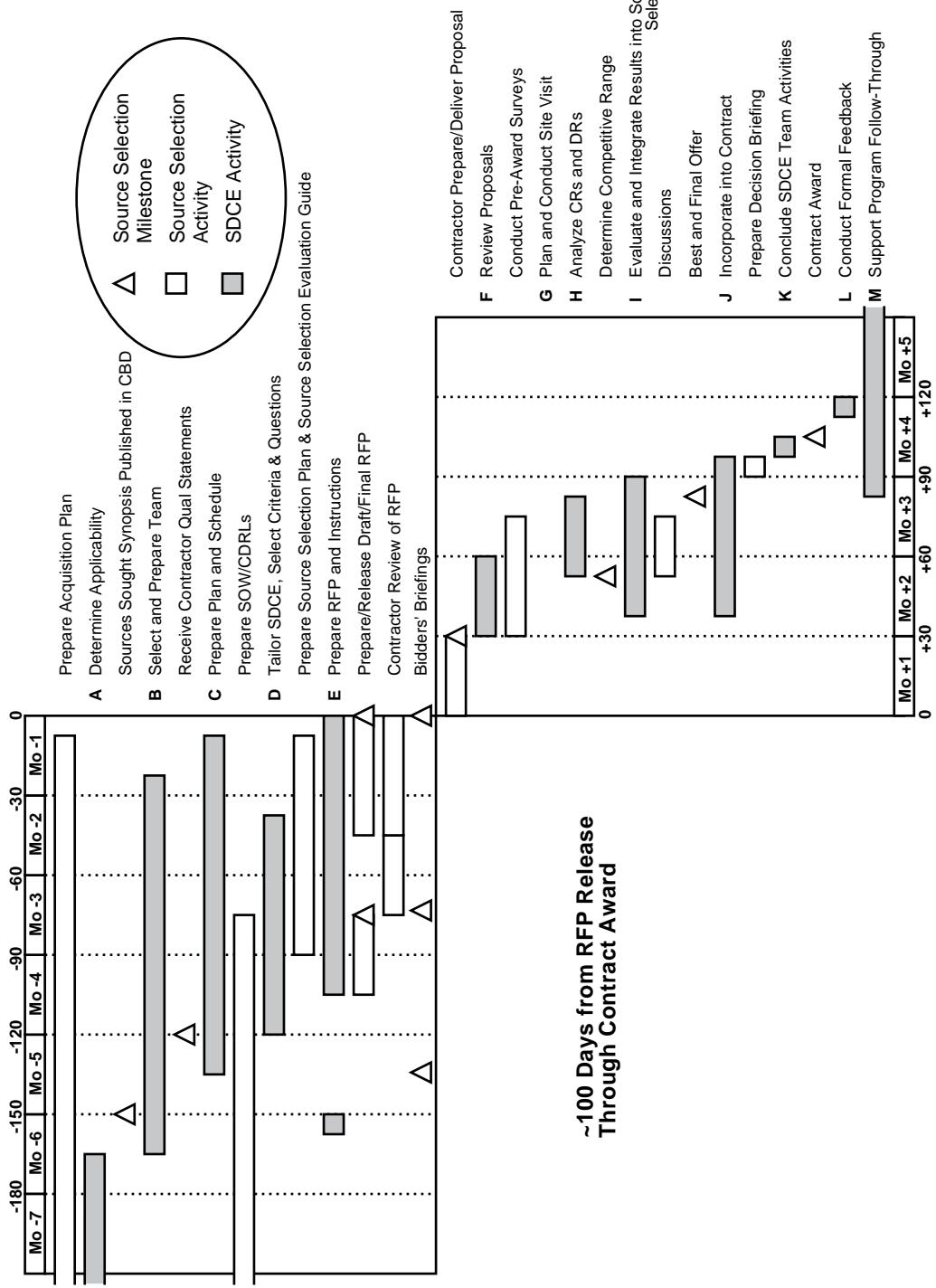
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## Example Of Incorporating SDCE Into Source Selection Structure



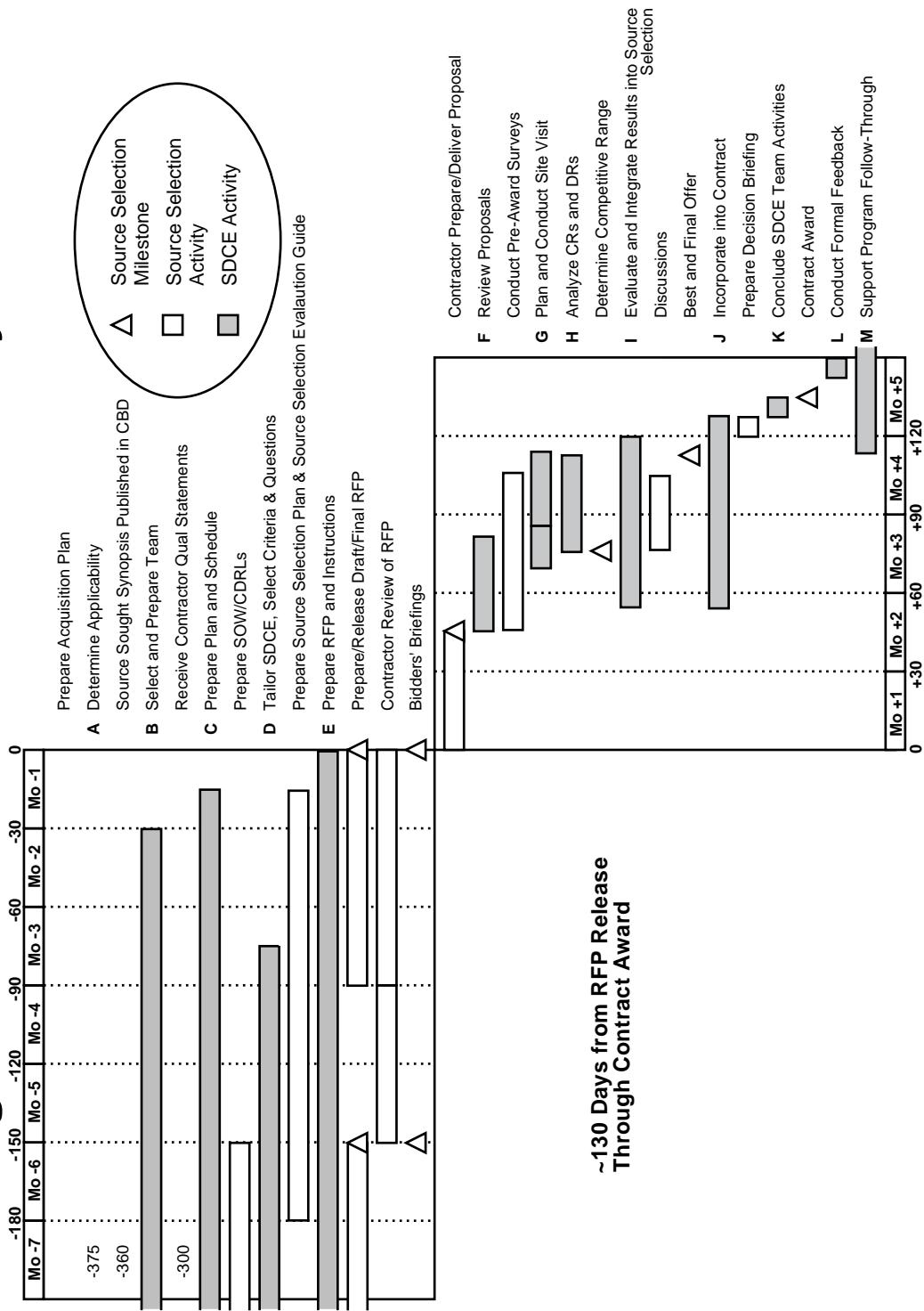
9311-U-79826

# SDCE Schedule Integrated with Source Selection Key Events



# SDCE Schedule Integrated with Source Selection Key Events

9311-U-79827



# SDCE Site Visit Schedule Template

Example Using 3.5 Day Site Visit for 4 Bidders and  
130 Days from RFP Release Through Contract Award

| Time from RFP Release                               | Month + 2 |   |   |        |   |   |        | Month + 3 |    |        |   |   |        |    | Month + 4 |        |   |   |        |   |   | Week 8 |   |    |   |   |   |   |    |   |
|-----------------------------------------------------|-----------|---|---|--------|---|---|--------|-----------|----|--------|---|---|--------|----|-----------|--------|---|---|--------|---|---|--------|---|----|---|---|---|---|----|---|
|                                                     | Week 1    |   |   | Week 2 |   |   | Week 3 |           |    | Week 4 |   |   | Week 5 |    |           | Week 6 |   |   | Week 7 |   |   |        |   |    |   |   |   |   |    |   |
|                                                     | M         | T | W | Th     | F | M | T      | W         | Th | F      | M | T | W      | Th | F         | M      | T | W | Th     | F | M | T      | W | Th | F | M | T | W | Th | F |
| SDCE Site Visit Activity                            |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| SDCE Site Visit Notification Letter Sent to Bidders |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| SDCE Team Site Visit Planning                       |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| Competitive Range Decision                          |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| Acquisition Open for Discussions                    |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| SDCE Team Site Visit Preparation                    |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| SDCE Team Conducts Site Visit                       |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| SDCE Team Site Visit Data Analysis                  |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |
| Request for BAFO                                    |           |   |   |        |   |   |        |           |    |        |   |   |        |    |           |        |   |   |        |   |   |        |   |    |   |   |   |   |    |   |

## **SDCE Proposal Data**

- **RESPONSES TO QUESTIONS**
- **EVIDENCE OF PROCESS USE (SAMPLE DATA)**
- **COMPANY PROCESS STANDARDS**

9311-U-79832

## Example Cover Sheet for Project Sample Data

| Cover Sheet for Project Sample Data |                                     |                                |
|-------------------------------------|-------------------------------------|--------------------------------|
| ATTRIBUTES                          | PROPOSED PROJECT                    | SAMPLE PROJECT                 |
| Offeror:                            | A                                   |                                |
| Sample Project Name:                | B-1B_Navigation_and_Weapons_Upgrade |                                |
| Title of Sample:                    | Cost_Estimation_Worksheets          |                                |
| Critical Capability:                | Software_Estimating                 |                                |
|                                     |                                     |                                |
| Application Domain                  | Fighter Aircraft                    | Bomber Aircraft                |
| Product Type                        | Avionics                            | Navigation and Weapon Delivery |
| Acquisition Phase                   | EMD                                 | EMD                            |
| Software Development Phase          | Requirements Analysis               | Integration Testing            |
| Award Date                          | March 1989                          |                                |
| Contract Duration                   | 9 Years                             | 6 Years                        |
| Subcontractors                      | 3 Software Subs                     | 1 Software Sub                 |
| Software KSLC                       | 1200 KSLC                           | 200 KSLC                       |
| Software Team Size                  | 260                                 | 65                             |
| Language(s) and Percentage          | Ada (100%)                          | Jovial (85%)<br>Assembly (15%) |
| Target Processor(s)                 | R3000<br>MIL-STD-1750               | MIL-STD-1750                   |
| Applicable MIL-STDs                 | MIL-STD-2167A<br>MIL-STD-2168       | MIL-STD-2167                   |
|                                     |                                     |                                |

# Example Capability Definition Matrix

9311-U-79865

| CAPABILITY DEFINITION MATRIX                         |                                        | INSTITUTIONALIZATION                                                                                               | LOCATION OF CAPABILITY DESCRIPTION                                                                                 |
|------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------|
| OFFEROR                                              | A                                      |                                                                                                                    |                                                                                                                    |
| FA                                                   | Quality Management and Product Control | QUESTIIONNAIRE PROPOSAL AND SDCE                                                                                   | LIST THE TITLES OF REFERENCE DOCUMENTS AND THE LOCATION OF THE DESCRIPTION WITHIN THE DOCUMENT                     |
| CCA                                                  | Software Configuration Management      | OTHER SUPPORTING MATERIAL                                                                                          | OTHER SUPPORTING MATERIAL                                                                                          |
| CRITICAL CAPABILITIES:                               |                                        | PROJECT PROCEDURE OR STANDARD OR STANDARD PROCEDURE                                                                | PROJECT PROCEDURE OR STANDARD OR STANDARD PROCEDURE                                                                |
| SCM Planning                                         | X X X                                  | SEMP Pg 24; SEMS Pg 8; ABC Corp CM Procedures Pg 2-11; Draft Project CM Plan Pg 3-11                               | SEMP Pg 24; SEMS Pg 8; ABC Corp CM Procedures Pg 2-11; Draft Project CM Plan Pg 3-11, 17-21, 26, 31-33             |
| Baseline/Configuration Identification and Management | X X X                                  | SDP Pg 11; ABC Corp CM Procedures Pg 12-14, 23-27; Draft Project CM Plan Pg 13-16, 21-22, 28                       | SDP Pg 11; ABC Corp CM Procedures Pg 12-14, 23-27; Draft Project CM Plan Pg 13-16, 21-22, 28                       |
| Configuration Audits                                 | X X X                                  | ABC Corp CM Procedures Pg 36-37; Draft Project CM Plan Pg 36-40                                                    | ABC Corp CM Procedures Pg 36-37; Draft Project CM Plan Pg 36-40                                                    |
| Configuration Control and Status Accounting          | X X X                                  | ABC Corp Procedures Pg 11-13,15-19; Draft Project CM Plan Pg 12-18, 22-27                                          | ABC Corp Procedures Pg 11-13,15-19; Draft Project CM Plan Pg 12-18, 22-27                                          |
| Configuration Management Library and Tools           | X X X                                  | SDP Pg 28-31; SEMP Pg 26-27; SEMS Pg 14; Draft Project CM Plan Pg 38-41; Library Procedures Pg All; Proposal Pg 86 | SDP Pg 28-31; SEMP Pg 26-27; SEMS Pg 14; Draft Project CM Plan Pg 38-41; Library Procedures Pg All; Proposal Pg 86 |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |
|                                                      |                                        |                                                                                                                    |                                                                                                                    |

# Example Capability Implementation Matrix Showing Project Sample Data

9311-U-79866

| CAPABILITY IMPLEMENTATION MATRIX                                                                                                                                             |                | PROJECTS IMPLEMENTED ON AND LEVEL OF INTEGRATION |                                |                       |                           |                            |                            |                     |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------|--------------------------------------------------|--------------------------------|-----------------------|---------------------------|----------------------------|----------------------------|---------------------|--|
| OFFEROR A                                                                                                                                                                    |                | PROJECTS IMPLEMENTED ON AND LEVEL OF INTEGRATION |                                |                       |                           |                            |                            |                     |  |
|                                                                                                                                                                              |                | PROJECTS IMPLEMENTED ON AND LEVEL OF INTEGRATION |                                |                       |                           |                            |                            |                     |  |
| CRITICAL CAPABILITIES:                                                                                                                                                       | NEW CAPABILITY | A-10 Weapon Delivery System                      | F-11 Flight Instrument Upgrade | F-16 Heads-Up Display | F-4 Fire Control Computer | F-15 Avionics Modemization | A-6 Flight Control Systems | Project Sample Data |  |
| FA Quality Management and Product Control                                                                                                                                    | -              | (S)                                              | (S)                            | (S)                   | -                         | -                          | -                          | (S)                 |  |
| CCA Software Configuration Management                                                                                                                                        | -              | (S)                                              | (S)                            | (S)                   | -                         | -                          | -                          |                     |  |
| SCM Planning                                                                                                                                                                 | -              | (S)                                              | (S)                            | (S)                   | (S)                       | (S)                        | (S)                        |                     |  |
| Baseline/Configuration Identification and Management                                                                                                                         | -              | (S)                                              | (S)                            | (S)                   | (S)                       | (S)                        | (S)                        |                     |  |
| Configuration Audits                                                                                                                                                         | -              | -                                                | -                              | -                     | -                         | -                          | -                          |                     |  |
| Configuration Control and Status Accounting                                                                                                                                  | N              | -                                                | -                              | -                     | -                         | -                          | -                          |                     |  |
| Configuration Management Library and Tools                                                                                                                                   | N              | -                                                | -                              | -                     | -                         | -                          | -                          |                     |  |
| <p style="text-align: center;">Same Projects are Listed in the Same Order for all CCAs</p>  |                |                                                  |                                |                       |                           |                            |                            |                     |  |

## Example Capability Implementation Matrix Showing Integration Problem Areas

9311-U-79867

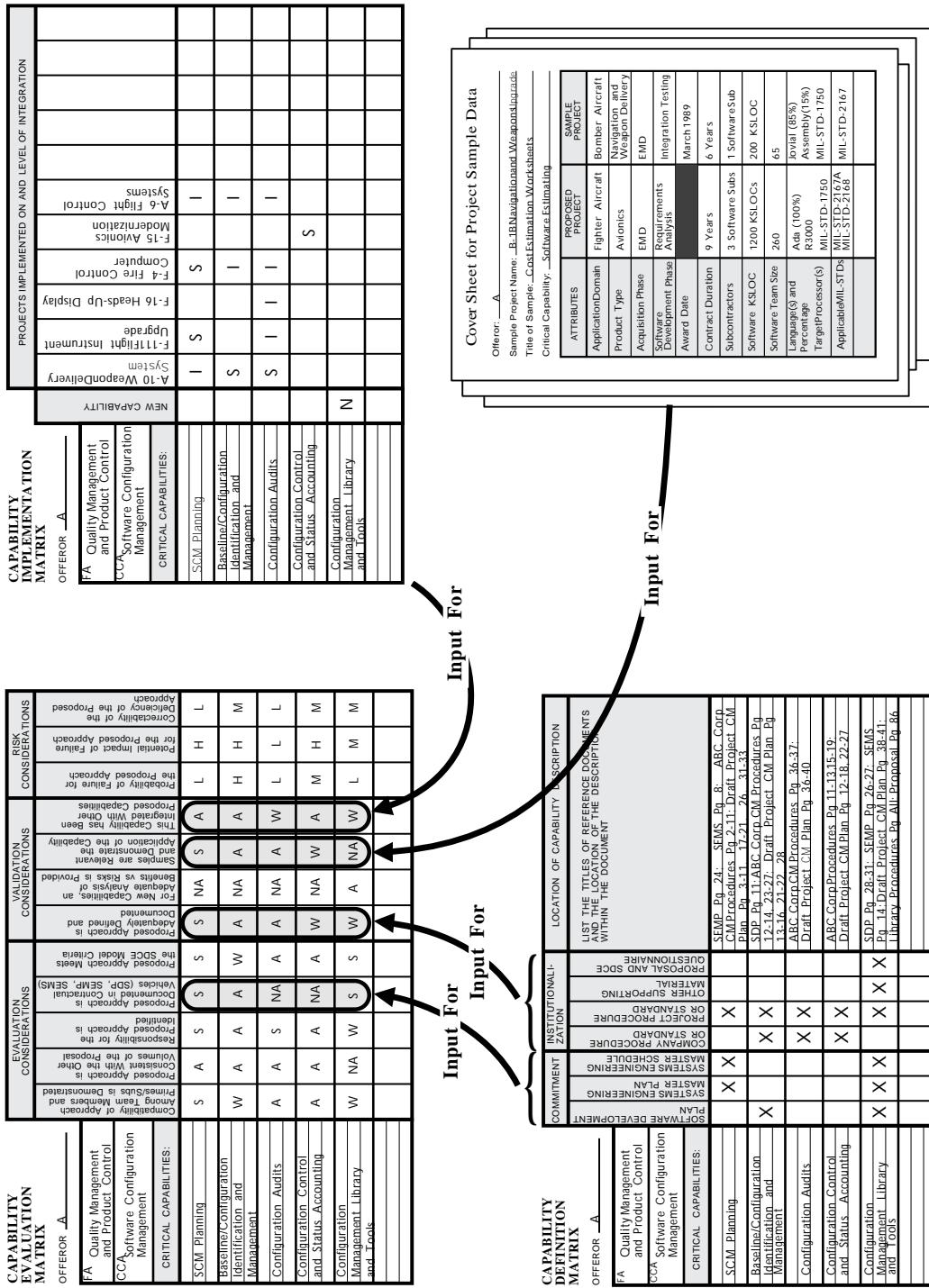
| CAPABILITY IMPLEMENTATION MATRIX                     |   | PROJECTS IMPLEMENTED ON AND LEVEL OF INTEGRATION |   |                                           |   |                                       |   |                        |   |                |   |                             |                                |                       |                           |                             |                            |                                                         |
|------------------------------------------------------|---|--------------------------------------------------|---|-------------------------------------------|---|---------------------------------------|---|------------------------|---|----------------|---|-----------------------------|--------------------------------|-----------------------|---------------------------|-----------------------------|----------------------------|---------------------------------------------------------|
|                                                      |   | OFFEROR A                                        |   | FA Quality Management and Product Control |   | CCA Software Configuration Management |   | CRITICAL CAPABILITIES: |   | NEW CAPABILITY |   | A-10 Weapon Delivery System | F-11 Flight Instrument Upgrade | F-16 Heads-Up Display | F-4 Fire Control Computer | F-15 Avionics Modernization | A-6 Flight Control Systems | Same Projects are Listed in the Same Order for all CCAs |
| SCM Planning                                         | - | S                                                | - | S                                         | - | -                                     | - | S                      | - | -              | - |                             |                                |                       |                           |                             |                            |                                                         |
| Baseline/Configuration Identification and Management | S | -                                                | - | -                                         | - | -                                     | - | -                      | - | -              | - |                             |                                |                       |                           |                             |                            |                                                         |
| Configuration Audits                                 | S | -                                                | - | -                                         | - | -                                     | - | S                      | - | -              | - |                             |                                |                       |                           |                             |                            |                                                         |
| Configuration Control and Status Accounting          | N | -                                                | - | -                                         | - | -                                     | - | S                      | - | -              | - |                             |                                |                       |                           |                             |                            |                                                         |
| Configuration Management Library and Tools           | N | -                                                | - | -                                         | - | -                                     | - | -                      | - | -              | - |                             |                                |                       |                           |                             |                            |                                                         |

## Example Capability Evaluation Matrix

9311-U-79868

| CAPABILITY EVALUATION MATRIX                         |                                       | EVALUATION CONSIDERATIONS |    |   |           |   |    | VALIDATION CONSIDERATIONS |    |    |           |   |   | RISK CONSIDERATIONS |  |  |           |  |  |
|------------------------------------------------------|---------------------------------------|---------------------------|----|---|-----------|---|----|---------------------------|----|----|-----------|---|---|---------------------|--|--|-----------|--|--|
|                                                      |                                       | Offeror A                 |    |   | Offeror B |   |    | Offeror C                 |    |    | Offeror D |   |   | Offeror E           |  |  | Offeror F |  |  |
| FA Quality Management and Product Control            | CCA Software Configuration Management | S                         | A  | S | S         | S | S  | NA                        | S  | A  | L         | H | L |                     |  |  |           |  |  |
| SCM Planning                                         |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
| Baseline/Configuration Identification and Management |                                       | W                         | A  | A | VW        | A | NA | A                         | A  | A  | W         | L | L | M                   |  |  |           |  |  |
| Configuration Audits                                 |                                       | A                         | A  | S | NA        | A | A  | NA                        | A  | NA | W         | A | M | H                   |  |  |           |  |  |
| Configuration Control and Status Accounting          |                                       | A                         | A  | A | NA        | A | W  | NA                        | W  | A  | NA        | W | L | M                   |  |  |           |  |  |
| Configuration Management Library and Tools           |                                       | W                         | NA | W | S         | S | W  | A                         | NA | W  |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |
|                                                      |                                       |                           |    |   |           |   |    |                           |    |    |           |   |   |                     |  |  |           |  |  |

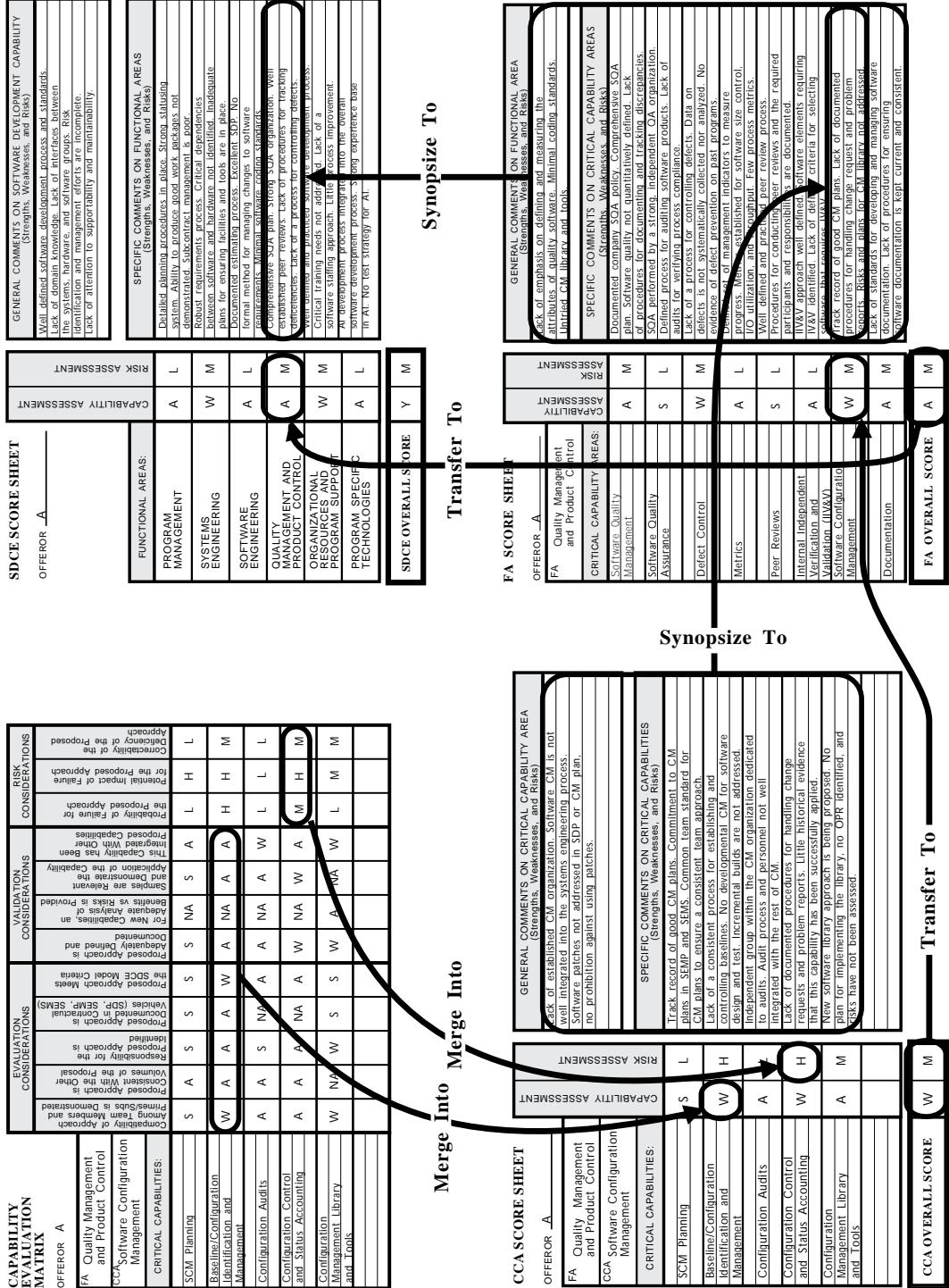
# Relationship of Offeror-Completed Forms to Capability Evaluation Matrix



# SDCE Roll-up Process

0311-U-79904

| CAPABILITY EVALUATION MATRIX                         |                                                            | VALIDATION CONSIDERATIONS |     | RISK CONSIDERATIONS |   |
|------------------------------------------------------|------------------------------------------------------------|---------------------------|-----|---------------------|---|
| OFFEROR A                                            | FA Quality Management and Product Control                  | S                         | A   | S                   | S |
| CCA Software Configuration Management                | Compliance of CM processes is demonstrated and documented. | A                         | S   | S                   | S |
| SCM Planning                                         | Primarily CM processes is demonstrated and documented.     | S                         | A   | S                   | S |
| Baseline/Configuration Identification and Management | Proposed approach is described and documented.             | W                         | A   | A                   | A |
| Configuration Audits                                 | Proposed approach is described and documented.             | A                         | S   | A                   | A |
| Configuration Control and Status Accounting          | Proposed approach is described and documented.             | A                         | A   | A                   | W |
| Configuration Management Library and Tools           | Proposed approach is described and documented.             | W                         | N/A | S                   | W |



**COSTS**  
**MANPOWER**  
**ESTIMATE**  
**OF EFFORT**  
**REQUIRED**

9311-U-79834

## "NO DISCUSSIONS" Impact

9311-U-79825

- DISCUSSIONS ALLOWED
  - SITE VISIT CONDUCTED
  - RESULTS USED IN CONJUNCTION WITH PROPOSAL MATERIAL EVALUATIONS
  - SDCE RESULTS REVIEWED/PROCESS REVISITED WITH CONTRACTOR POST CONTRACT AWARD
- DISCUSSIONS NOT ALLOWED
  - SOURCE SELECTION EVALUATION BASED ON MATERIAL SUBMITTED WITH PROPOSAL
  - FOLLOW-UP QUESTIONS AND DETAILED INTERCHANGE WITH THE CONTRACTOR CONDUCTED POST CONTRACT AWARD

## Features

9311-U-79830

- MODEL DRIVEN
  - FUNCTIONAL AREAS (FA), CRITICAL CAPABILITY AREAS (CCA), AND CRITICAL CAPABILITIES (CC)
  - MODEL CRITERIA
  - QUESTIONS
- DEFINED TEAM MAKE-UP
  - CORE TEAM MEMBERS
  - ADDITIONAL SUPPORT PARTICIPANTS
  - QUALIFICATION CRITERIA
  - PART OF SSEB
  - INCLUDES STAKEHOLDERS
- FOCUS ON SUBJECT PROGRAM
  - VALIDATION OF CAPABILITY THROUGH EXAMPLES [CAPABILITY = PROCESS + PEOPLE + TOOLS + TECHNOLOGY]
  - ORGANIZATIONAL SUPPORT TO PROGRAM
  - RATIONALE FOR NEW PROCESSES
  - FOCUS ON COMMITMENT TO FOLLOW PROPOSED PROCESSES

## Features (Continued)

9311-U-79831

- INCLUDED IN RFP CONTENT
  - ACCOMMODATE "NO DISCUSSION" REQUIREMENT
  - REQUEST SDCE DATA WITH PROPOSALS
  - CONTRACTOR SELECTS PROJECT EXAMPLES
- INTEGRATED INTO SOURCE SELECTION PROCESS
  - IDENTIFIES & INTEGRATES STRENGTHS, WEAKNESSES, AND RISKS INTO AREAS, AND FACTORS [VERSUS A SINGLE SCORE]
- COMPREHENSIVELY DOCUMENTED SDCE METHOD
  - PUBLIC DOCUMENT
  - NUMEROUS TEMPLATES
  - GUIDELINES TO FACILITATE CONSISTENT IMPLEMENTATION
- TAILORABLE
  - PROVIDE GUIDELINES
  - FOCUS ON HIGH VALUE DISCRIMINATORS
  - RANGE OF OPTIONS FROM LARGE TO SMALL PROGRAMS
- SITE VISIT GUIDELINES
  - CONTRACTOR DETERMINES RESPONSE TEAM COMPOSITION
  - CONTRACTOR CAN RAISE ISSUES
  - FEEDBACK TO CONTRACTOR SUPPORTED

## **Policy On Evaluating Contractor's Capability**

9311-U-79913

- **AFSCP 800-51, 1990**
  - USE EITHER SDCCR OR SCE METHOD
- **SAF/AQ POLICY LETTER 93M-003, JUNE 93**
  - USE SCE FOR MIS & C3
  - USE SDCCR FOR EMBEDDED WEAPON SYSTEMS
- **SAF/AQK VERBAL, JULY 1993**
  - USE SDCE ON A FEW AFMC PILOT PROGRAMS AND ASSESS RESULTS
- **POLICY GOAL**
  - USE SDCE ACROSS AFMC

## Center OPR

- NAME
- LOCATION
- COME SEE ME

9311-U-79907

## **SDCE Summary**

- INTEGRATED WITHIN SOURCE SELECTION STRUCTURE
- ACCURATELY IDENTIFIES AND SUPPORTS REDUCTION OF DEVELOPMENT RISK
- PROVIDES INSIGHT INTO CONTRACTOR DEVELOPMENT CAPABILITY AND PROCESSES
- ASSURES SYSTEM/SOFTWARE ENGINEERING PROCESS IS FOLLOWED ON PROGRAM (SEMP/SEMS/SDP)

9311-U-79911

## **SDCE Site Visit**

- DURATION
- DECISION TO DO
- ADVANCE NOTICE & COORDINATION
- APPROACH
- FEEDBACK

**SDCE SITE VISIT  
OVERVIEW**

**MR. A.B.C.  
SDCE CHAIR**

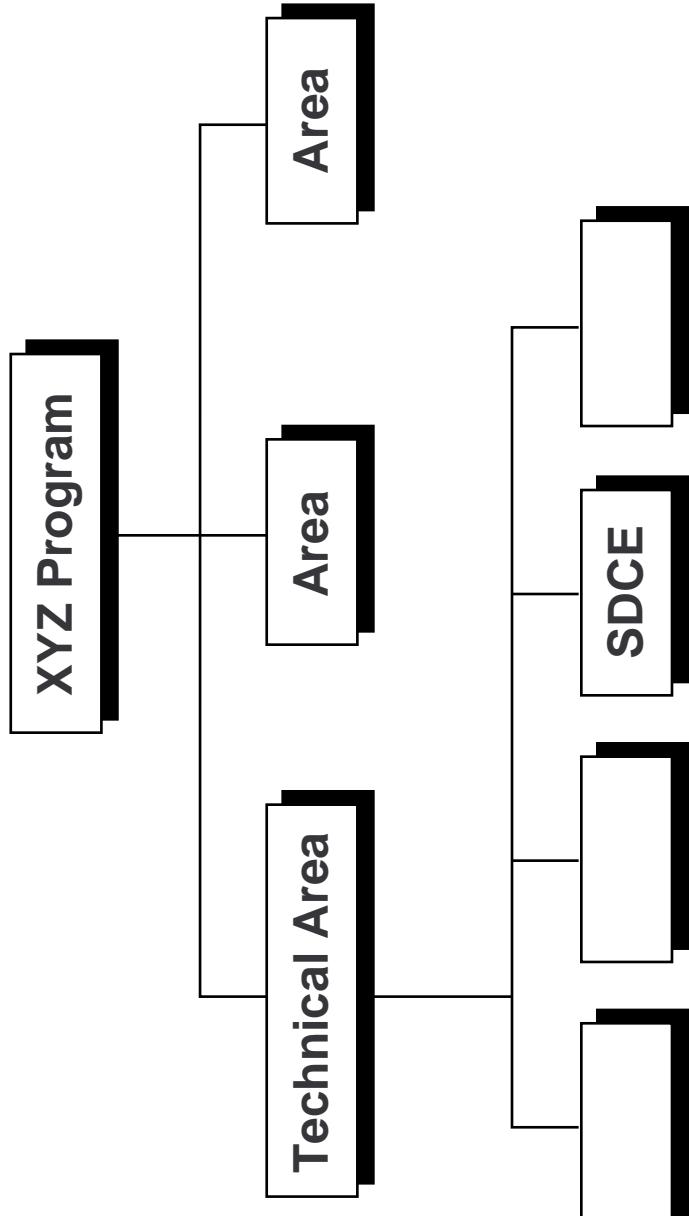
## Team Members

9311-U-79909

|      |          |                |
|------|----------|----------------|
| NAME | LOCATION | TITLE/FUNCTION |

## Integration Within Source Selection Structure

9311-U-79906



## SDCE Site Visit

- OPEN CONSTRUCTIVE DIALOG
- FOCUS ON
  - PROCESS DEFINITION
- COMMITMENT TO FOLLOW PROCESS ON PROGRAM  
(SEMP/SEMS/SEDS/SDP)
- NO CRS/DRs ISSUED DURING SITE VISIT
- OPPORTUNITY FOR SITE VISIT FEEDBACK SESSION
  - NO REPORTING OF STRENGTHS, WEAKNESSES, RISKS
  - DO WE COMPREHENSIVELY UNDERSTAND YOUR APPROACH?
- BIDDER OPPORTUNITY TO RAISE OTHER SIGNIFICANT CAPABILITY ISSUES
- SDCE RESULTS ARE NOT RELEASEABLE (SOURCE SELECTION SENSITIVE DATA)
  - CAN BE SHARED WITH EVALUATED OFFEROR (AFTER AWARD FEEDBACK)
  - CANNOT BE SHOWN TO OTHER OFFERORS